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ORIGINAL ARTICLES.

THE UNITED STATES AMBULANCE-SHIP "SOLACE."

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IN discussing, with a large number of medical men, various topics in connection with duty on board the United States Ambulance-ship "Solace," I was struck with the great interest manifested by them in the ship, and with the vagueness of their ideas as to her equipment and mission. In view of the foregoing I suggested to Surgeon-general W. K. Van Reypen, United States Navy, who first advocated the fitting out of an ambulance-ship as a part of the fleet in naval contests, that the publication of his paper, "Handling and Care of the Wounded in Modern Naval Warfare," read before the Twelfth International Medical Congress, held at Moscow, Russia, August 19, 26, 1897, would be of immense value and absorbing interest to medical men in civil life.

He has delegated to me the duty of giving some account of the "Solace," the necessity for her existence, and her mission, and has allowed me to make use of such of his paper as may be necessary for the purpose. Dr. Van Reypen's paper is published in full in the Report of the Surgeon-general of the Navy, 1897, and from it I take the following:

How best to handle and care for the wounded in modern naval warfare is a problem that now confronts naval surgeons. It is thrust upon us by the energy and accomplishments of experts in construction, ordnance, and engineering. While they have so successfully fulfilled their mission of destruction, we must not be laggards in our still more important work of succor to the wounded and helpless. It is theirs to destroy; it is ours to save.

The conditions under which we find ourselves in the present day of battle-ships necessitate a radical departure from our former methods of treatment of wounded men in action, and their subsequent care. In the days of wooden ships, with flush gun- and spar-decks, admitting of comparative easy transportation of wounded, there was very little difficulty in moving men injured in action to the sick bay, where they could receive every needed surgical attention. The surgical staff was a unit, exercising its function in a circumscribed sphere. Its work was brought before it; now it must seek it.

A modern battle-ship is a honeycomb of steel, each cell containing its quota of workers, all acting harmoniously and in concert toward the accomplishment of the desired end, the overthrow of the adversary. Separated from their fellows by steel decks and water-tight doors, some means for their assistance in time of distress must be devised by naval surgeons; means that will not interfere with the fighting efficiency of the whole, and yet sufficient to assure the combatants that if disabled in the performance of their duty they will not be cast aside as useless incumbrances.

Any one familiar with the construction of a modern battleship will readily see the impossibility of caring for wounded men as in the days of wooden ships. The object of making closed compartments is to have them closed in time of action. The object of battle-plates is to have them screwed on in time of battle. By as much as these precautions are neglected, by so much is the efficiency of the fighting machine decreased. In the tops, in the superstructure, and in some of the living spaces men may be reached and cared for, but never again in modern warfare will the sick bay be the place where all the wounded will be brought during an action, and where the surgical staff will expend all of its energies.

It is more than probable that future sea fights will be short and bloody, and be fought at short range. With modern rapid-fire guns, all exposed parts of a vessel would soon be cleared of the living occupants and heavy armor would be the only protection.

Further on Dr. Van Reypen says:

Meanwhile the importance of first aid is clearly manifest. This first aid can only be rendered by comrades. The thorough instruction of the whole ship's company in the efficient manner of thus administering first aid cannot be too strongly urged. One of the first duties of the surgical staff of a newly commissioned vessel should be the drilling of the crew in the proper methods of controlling hemorrhage from different parts of the body, the removal of foreign bodies from wounds, and the placing in positions of injured or broken limbs. They should also be taught how to carry a man up or down through narrow hatches, over obstacles, or through contracted or tortuous passages with the least fatigue to themselves and the greatest comfort to the wounded. In many instances it would be impossible to use a cot or any form of stretcher; under these circumstances the only alternative is that the disabled should be carried.

The fighting space allotted, especially in turrets, is so contracted that the immediate removal of a disabled or wounded man is of the utmost importance. There is no unoccupied space in the turret where he could be laid aside, out of the way of the gun-workers, until action is over. His presence would temporarily disable the gun. The only practicable method of caring for him is to lower him to the partially cleared space at the base of the turret, either by the ammunition-hoist or lashed in a hammock; even here he would receive only temporary aid, as the space is too limited for the performance of any operation. Here he must remain until a favorable opportunity arises for his transfer to the central station.

On the vessels that remain afloat after a modern naval engagement, the decks will be much encumbered with wounded, such first aid as was possible will have been given to them, but their comfort and well being will by no means be enhanced by retaining them on board the vessel. Naval engagements will not be likely to take place under the lee of a shore hospital, and humanity demands that wounded men shall have speedy transfer to the place where they can be best cared for, and that place can be none

other than an ambulance-ship. Such a vessel should be as much a component part of a fleet as the admiral's flag-ship. It would greatly add to the morale of the men behind the guns, when they went into action, if they saw near at hand a commodious hospital, with all the appliances for their care and comfort, and under the superintendence of skilled medical officers. This vessel should be solely and entirely an ambulance-ship, with a crew only sufficient to work the ship, and all her available deck room given up to quarters for sick and wounded.

Such a ship is the "Solace" which has been arranged to include as many conveniences as is practicable. She is primarily a vessel adapted for the care and welfare of sick and wounded men, and all other considerations are made subservient to this end. She has a displacement of 3600 tons, and an average speed of 14 knots; is 352 feet on the load-line and about 370 feet over all. Forward, below is a tank of 27,000 gallons capacity. The ship carries powerful steam-launches and barges for transferring the sick and wounded at sea. On the upper deck on both sides there are steam-winches for hoisting and lowering the wounded, or boats, which can be used simultaneously. On the uppermost deck are some of the officers' quarters and offices; on the next deck, forward, is an operating-room, 30x30 feet, well lighted, and magnificently equipped with aseptic hospital furniture of the best pattern, and the outfit of instruments, sterilizers, dressings, etc., is complete in every detail. The floor is so tiled that it can be easily cleaned and slipping avoided. A dressing-room and a dispensary adjoin the operating-room. On this deck are mess rooms for the officers of the ship, for wounded officers able to be about, and for the petty officers of the ship. There is a lounging- and smoking-room for those able to be on deck.

On the engine-room deck is a fully equipped steam laundry, with a drying-room, and a disinfecting-chamber for wash clothes. An ice-machine has been set up, and a cold-storage room of good size is ready for use. The ship is equipped with three large formaldehyd generators.

There are numerous staterooms for wounded officers, and the men will be berthed in spacious wards in the forward and after parts of the ship, below, which will be ventilated by powerful blowers and supplementary electric fans. The vessel is heated by steam and lighted by electricity throughout. There will be accommodations for about 350 patients.

There are four medical officers attached to the ship; three apothecaries, one of whom is a trained nurse and an embalmer; eight graduated nurses from the Mills Training School, Bellevue Hospital; two laundrymen; a cook, and four mess attendants for the sick and wounded, complete the medical department of the ship.

As soon as an action is over the steam-launches of the "Solace" will tow their barges alongside the ships that have been in action, and the wounded will be lowered into them, and the boats will return to the ambulance-ship, when the wounded will be brought on board and placed in the surgeons' care for treatment. With the facilities at hand the results ought to be excellent.

In no sense is the "Solace" a hospital ship. When it is found that a second action is not impending she will steam to the nearest hospital and place her sick and wounded on shore for treatment, and will then rejoin the fleet. Should the army invade Cuba, it will probably fall to her lot to transfer its wounded to Key West. The vessel is more properly designated an "ambulance ship."

The ship will fly the Red Cross and will be protected by the articles of the Geneva Convention.

COMMUNICATION WITH A TOWN INFECTED WITH YELLOW FEVER.[1]

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AN infected town is a source of danger to its neighbors, whether it be declared in a state of quarantine or not, because a certain amount of illicit communication will occur, especially if the epidemic be prolonged. In my experience, the rigid non-intercourse rule, if continued for considerable periods, is less safe than carefully regulated communication. The object then is to formulate general rules under which commerce through and from infected places can be carried on (1) with the greatest safety to other communities, and (2) with the least inconvenience. The measures to be taken to some extent vary from a sanitary standpoint with the degree of infection of the place and from a commercial one with the extent of the interests involved and the way in which these interests are involved. The problem, even considering only the risk of conveying infection, which naturally is the first consideration, is of extreme intricacy and only a general outline, to be varied in particular cases, can be given here.

Railroad Traffic through an Infected Town.—(1) A passenger train shall not stop in an infected town nor shall the windows or doors be allowed open while the train remains in the affected locality; and no communication shall be allowed between the passengers or train-crew and the town. (2) Freight traffic through such a town shall be without stopping. (3) In cases where stopping in town is absolutely necessary for freight traffic, and also when the town is large and the infection general, a special crew shall take the train through the town. The relay stations where these changes are made

[1] Read at the Meeting of the Interstate Quarantine Convention, Held at Atlanta, Ga., April 12, 1898.

shall be under sanitary supervision. (4) Sanitary inspectors shall be stationed in the town.

Railroad Traffic from an Infected Town.—(Through traffic, *i. e.*, to points incapable of receiving yellow-fever infection, to be designated hereafter as "points North." The places capable of receiving infection being designated as "points South.") (1) *Freight.* Freight of any usual kind in sealed cars can go without hindrance through to destination. (2) *Empties.* Empties must not stay in an infected town or if parked in such a locality, must be disinfected. Flat cars must be swept clean. Box cars made mechanically clean and dry must be sent open to the relay station where they are to be inspected for tramps. All fruit cars must be disinfected. (3) *Mail.* Through mail, not distributed South, needs no quarantine restrictions save disinfection of bags. Parcels, except mercantile sample packages, shall be barred. (4) *Passenger.* Traffic to points North can be allowed by preventing all chance of such passengers conveying infection *en route*, either by themselves leaving the train *en route* or by returning to points South, or by fomites mainly contained in their clothing. This traffic must be on special cars reserved for these passengers and preferably on a special train. A sanitary inspector must accompany them through the quarantined territory, under whose absolute charge the train is. The coaches which carry these passengers must be disinfected before they return South.

Duties of Inspectors.—Train inspectors must be properly relayed, and those running from the infected town should be immune. If they sleep in other than clean territory they *must* be immune.

Passenger Traffic.—(1) Direct passenger traffic from an infected town to points capable of receiving infection must not be allowed. (2) Immunes may go to such territory after disinfection of baggage without detention. (3) Others must pass a time sufficient to cover the period of incubation of yellow fever, ten days, and not be exposed to any infection during this period, before being allowed to enter this territory.

Relays of Trains.—(1) All train crews from an infected town must be changed, and not allowed to have direct communication with certainly clean territory. This should be done at a non-infected place as isolated as possible, a siding rather than a station and certainly not in a town. (2) Every man, mail-agent, expressman, and train-butcher must make this relay, unless we know he is going North not to return to points South, in which case he is like a through passenger. Pullman crew to be relayed. (3) None of the merchandise of the train-butcher, unless disinfected papers be excepted, must pass the relay. No possible fomites must pass the relay to the crew bound North, and as little communication as possible, none save such as is necessary for the run of the train, is allowed. The relay must be under the supervision of a sanitary officer or officers (two are generally required) whose position is one of great responsibility. At these stations a very careful search for tramps must be instituted. (4) The camps for the North and South crews must be at a considerable distance from each other, and the run of trains should be arranged so as to have the crews in camp as little as possible. For passenger trains there need be no delay; for freight trains generally there must be relays and their crews must go into camp. (5) Occasions may arise where it is necessary to guard the Southern relay camp by a number of guards, as if it were a camp of detention. It must never be allowed to become infected. If it does the camp must be moved. (6) *Laundry* of Pullman cars must not be done in infected places.

Steamboat Communication.—This can be carried on: (1) By relays like railroad trains. (2) By supervision of the landing of freight and loading of same so as to prevent communication between the people ashore and the boat. This is confessedly difficult, but possible.

THE USE OF QUININ IN MALARIAL HEMOGLOBINURIA.

BY ALBERT WOLDERT, M.D.,
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FOR many years the discussion regarding the use of quinin in malarial hemoglobinuria has lain almost dormant, the majority of physicians of large experience being in favor of the administration of quinin in this condition, but Bastianelli again brings forward testimony of physicians who are still under the impression that there is a certain form of hemoglobinuria in which quinin is the causative factor and in which its administration is distinctly productive of harm. Tamaselli, Spyridon, Canellis, and Pasquale Muscato have recorded cases of hemoglobinuria occurring during an attack of ague and caused by quinin, and Karamitza speaks of a case in which hemoglobinuria could be produced in a student upon the exhibition of five grains of this drug.

Laveran tells us that Tamaselli maintains that quinin is capable of producing not only hemoglobinuria, but also an icterohematuric fever, which can be easily confounded with a similar form of fever occurring in hot countries. Plehn, Richardson, and others also hold to the opinion that quinin may cause hemoglobinuria.

Bastianelli admits that these cases are extremely rare in Italy and that no case has ever been reported from the Campagna. He states that the instances

of spontaneous hemorrhages due to the use of quinin occur in those individuals who have recently had an attack of malarial fever, although the plasmodium cannot be found in the blood at the time of the onset of the hematuria. This observer divides the spontaneous hemoglobinuria into three classes: (1) Those in which the blood contains estivo-autumnal parasites or young hyaline forms; (2) those in which the blood contains only crescentic or ovoid bodies and pigmented leucocytes; or, (3) those in which the blood examination is entirely negative and the only evidence of there having been an infection is the presence of endothelial perilobular melanosis. Here the attack of hemoglobinuria does not depend upon the presence of parasites, but begins without apparent cause.

Bastianelli finally takes up the quinin hemoglobinurias, and asserts that: (*a*) It occurs only in individuals in whom a malarial infection has been recently present; (*b*) the hemoglobinuric attack is constantly produced every time quinin is administered, whether it be given while the malaria is in progress (Tamaselli), or when the malarial infection has run its course (Murri); (*c*) extremely small doses of quinin are capable of bringing on an attack; (*d*) quinin hemoglobinuria has been observed in patients who have already suffered from hemoglobinuria (Murri).

The *quinin* hemoglobinuria he divides into two forms: (1) That occurring during the paroxysm, or paroxysmal hemoglobinuria, and (2) postmalarial hemoglobinuria. In these varieties, through a considerable length of time quinin will produce hemoglobinuria whenever it is administered. The course to be pursued depends upon the blood examination. If hemoglobinuria occurs during a malarial paroxysm and parasites are found in the blood, quinin should always be given. If, however, no parasites are found, either as a result of previous administration of quinin or on account of the spontaneous disappearance of the organisms, Bastianelli says that quinin should not be given, owing to the possibility that the paroxysm may have been due to its previous administration.

It will be observed that this report of Bastianelli has been quoted at some length and it is hoped that the reader will keep in mind his classification of "quinin hemoglobinuria."

In this connection it might be well to first briefly explain the physiologic action of quinin.

Local Action.—When applied upon the mucous membrane quinin exerts a very perceptible stimulant or irritant action. It has the same effect when applied to a muscle.

Circulation.—Wood states that he has never been able to perceive any depressant action upon the circulation in man after ordinary (3 to 5 grains) doses of the drug. In large doses it lowers the arterial pressure, due to action on the heart and its paralyzant effect upon the vasomotor system. Laveran says that it cannot be classed absolutely either among the stimulants or among the depressants, as its effects differ according to the dose employed. In small doses quinin in healthy men and in rabbits causes an acceleration of the heart's action, and an elevation of the blood-pressure. In large doses it slows the action of the heart.

Effect of Quinin on the Blood-Corpuscles and Plasmodium Malariæ.—Binz and Schutte have investigated its action upon the red blood-cells, and reached the conclusion that it lessens the power of the hemoglobin to convert oxygen into ozone, therefore it lessens the ozonizing action of the blood. The experiments of Binz go to show that the action of quinin is poisonous to the protoplasm of the organism which causes the disease, in other words, that it is antiparasitic. In his experiments, he showed that in a dilution of 1:20,000 it killed infusoria—paramecium—beginning within five minutes, and at the end of two hours there was complete dissolution of the organism. Five grains of quinin circulating in the blood of a man of average size represents a dilution of 1:16,000 which is stronger than that with which Binz paralyzed the colpoda within five minutes.

Rossbach believes that it deprives the protoplasm of the power of absorbing oxygen, thereby forming a combination less easily oxidized than either substance alone.

Quinin, having this effect upon protoplasm, it has been supposed that it might limit or destroy the phagocytic action of the white blood-corpuscles, but Laveran believes that instead of their action being diminished it is actually increased after its administration.

Effect of Toxic Doses of Quinin.—According to the experiments of Schlockow, Eulenberg, Briquet, and Cerna there is a lowering of the arterial pressure and the pulse is almost imperceptible at the wrist. The evidence is therefore clear that both in man and in the lower animals quinin in toxic doses is a powerful depressant to the heart-muscle and ganglia.

Cases in Which Large Doses of Quinin Have Been Given without Producing Hemoglobinuria.—Guersent cites a case in which a lady became deaf, dumb, and blind from taking 10 drams of quinin sulphate within the course of a few days. Guiacomini spoke of a case in which a man took 3 drams of quinin and who only suffered from symptoms of depression of the heart and nervous system. Briquet records a death following the enormous dose of 55 drams taken within a period of ten days.

Laveran quotes from Baillio, who reports the instance of two soldiers, who, intending to take a purgative, but instead of taking sodium sulphate, by mistake, drank a solution of quinin, so that each received about 3 drams of the salt. Half an hour after taking the medicine the men were seized with cramps in the epigastric region and with vomiting. They presented paleness of the face, dilation of the pupils, hurried respiration, chilly sensations, a small, irregular, and slow pulse, sometimes hardly perceptible, together with ringing in the ears, and symptoms of syncope. In the case of one, the symptoms gradually disappeared; the other died of heart-failure. It may be said that in these cases the persons affected were in good health and that there was no concomitant poison, such as a toxin, present to aid in the production of hemoglobinuria. To this the writer can say that in nearly fifty consecutive cases of typhoid fever treated at the Mercy Hospital, Pittsburg, in which quinin was given, no case of hemoglobinuria developed. Thousands of cases can be added by others.

Absorption and Elimination of Quinin.—Under ordinary circumstances absorption takes place very quickly, and Kerner found it in the urine within fifteen minutes when given by the month. Carofolo has confirmed this investigation. Binz has found quinin in the saliva of a poisoned dog, and Landerer in the urine, sweat, tears, milk of nursing mothers, and in dropsic effusions, while De Renzi and Albertoni found it in large quantities in the bile, when it had been ingested by the mouth.

Baccelli, Briquet, Binz, Dielt, and De Renzi all agree that while the excretion of quinin through the kidneys begins early, yet at the same time it continues very slowly, Dielt and De Renzi having found it in the urine six or seven days after its administration. Baccelli agrees with the statement of Manossci, strengthened by the experiments of Welitchkowski, that fever retards the action of quinin.

Quinin Idiosyncrasies.—Ringer speaks of a case in which the administration of quinin always caused a uniform red rash over the whole body, most marked on the back of the neck, accompanied by very severe stinging pain, especially in the back of the neck, and in the clefts between the fingers. Desquamation as free as after a sharp attack of scarlet fever always followed the rash. Quinin sometimes produces large erythematous patches, urticaria, swelling of the face and hands, tingling of the end of fingers and toes, a sense of warmth, acceleration of the pulse, and often great gastric irritability, with nausea and vomiting. Wood reports a case of amaurosis produced by a dose of 12 grains.

Schamberg notes a case in which a man fifty-five years of age, who, when taking quinin, always suffered from violent balano-urethritis, the meatus urinarius being occluded by a pseudomembranous exudate.

It will therefore doubtless be observed that in all these cases of idiosyncrasies due to quinin, that the drug seems to spend its force upon the nervous system and mucous membranes, rather than having any notable effect upon the renal organs or red blood-cells; further, that in small, large, and toxic doses, both in man and in the lower animals, in health and in disease, quinin has no tendency to produce hemoglobinuria.

Varieties of Hemoglobinuria.—Possibly the most logical classification of hemoglobinuria is made by Osler, as follows: (1) Paroxysmal hemoglobinuria, (2) toxic hemoglobinuria. The latter includes those due to (*a*) carbolic acid, (*b*) chlorate of potash, (*c*) napthol, (*d*) carbon dioxid, (*e*) poisons of infectious fevers, such as scarlet fever, yellow fever, typhus fever, and malarial fever.

How Hemoglobinuria Is Caused in the Infectious Fevers.—Owing to the action of the toxin upon the red cells, a process of necrobiosis begins, leading to disintegration and degeneration, setting free the hemoglobin (hemocytolysis), which dissolves in the blood plasma and, with a certain proportion of serum albumin, is excreted by the kidneys. No doubt this is the process set up in all the infectious fevers in which hemoglobinuria is observed, and we have no right to believe that the congestion and the hemoglobinuria (or hematuria) arising from the malarial fevers differs in its mode of production from this observed in any of the other varieties of infectious disease.

Dawson and Davis maintain that the real underlying condition which leads to hemoglobinuria is essentially a renal congestion, the latter holding to the belief that there is also some alteration in the nutrition of the vessel-walls, which may be due to an obscure hereditary influence.

Bemiss believes the condition to be due to a combination of altered blood-pressure, impaired nutrition of the vessel-walls, and changes in the vascular pressure in the various congested organs.

Morbid Anatomy of the Kidney of Acute Malaria.—Thayer states that the changes in the kidneys in acute malaria are usually much less marked than in the liver and spleen. The gross appearance of the organs varies but little from the normal. The glomeruli, however, are considerably pigmented, the pigment at times being seen within the large white cells within the vessels, and sometimes in the glomerular endothelium.

The Kidney of Malarial Hemoglobinuria.—These changes in the kidneys when hemoglobinuria has

supervened have been described by Thayer, Pellarin, Kierner, and Kelsch as follows: The kidneys are somewhat enlarged, the color varying from a deep reddish-brown, to a light yellowish-brown coffee color, often the color is distributed in pale, irregular, pin-head points, and blotches of a maroon-color are to be seen upon the surface, some several millimeters in area. The pyramids are of a deep red color from intratubular hemorrhages. The capsule is easily detached; the consistency of the organ is normal.

The epithelium of the convoluted tubules and of the large branches of Henle's loops is very opaque, the nuclei being scarcely visible. The epithelial cells are swollen and bulge into the lumen of the canal. The lumen of the tubule is filled with clumps of amorphous material or casts mixed to a greater or less extent with pigment. The epithelium and lumina of the tubules are filled with large granules often resembling casts. Between the glomerulus and capsule, usually near the mouth of the tubule, there is often quite a collection of granules, which are also occasionly found in epithelial cells, and sometimes free. In some cases there are small interstitial hemorrhages. The pyramids show few changes. The epithelium is usually intact, though sometimes protruding and vesicular cells suggest that this may take part in the formation of hyaline material. Almost invariably the tubes are filled with blood-corpuscles.

Having before us this vivid description of the morbid anatomy of the kidney of hemoglobinuria (hematuria) one cannot but see that it is a high grade of congestion due to some poison in the system having a profound influence upon the internal organs.

What Is the Cause of the Hemoglobinuria? —The law of causation involves the three following affirmations, each of which is the groundwork of a process of elimination: (1) Whatever antecedent can be left out without prejudice to the effect can be no part of the cause. (2) When an antecedent cannot be left out without the consequent disappearing, such antecedents must be the cause or part of the cause. (3) An antecedent and a consequent rising and falling together in numeric concomitance are to be held as cause and effect.

Possibly the first one of these affirmations is most applicable to this question: Having concurrently a dilute solution of quinin circulating in the blood, together with that of a powerful toxin, such as that formed by the plasmodium malariæ, can it be supposed that the former will gain the ascendancy and lead to the production of a condition which the largest doses have *always* failed to do?

Clinical Experience against the Theory of Quinin Hemoglobinuria. — Bastianelli admits that cases of hemoglobinuria following the administration of quinin in malarial fever are very rare in Italy, and that no case has ever been reported from the Campagna, but he states that the cases of spontaneous hemoglobinuria due to quinin increase in number as one goes toward the South. Laveran says he cannot understand why such a condition should be so common in Greece and Italy and so rare in Algiers. In North America let us trace its occurrence as we go toward the South: Dr. Ashhurst recently told the writer that he had never seen a case of hematuria (hemoglobinuria) produced by quinin, and that he would give quinin for this condition. Anders has seen hemoglobinuria produced in some cases of malarial fever in which quinin had not been taken, and states that it disappeared upon the administration of this remedy. Osler says that the condition does not exist in the latitude of Baltimore. Thayer, also of Johns Hopkins, in a recent private communication says that he has never seen a case of hemoglobinuria due to quinin. Dawson of South Carolina says: "I have avoided mentioning the theory, again recently discussed by Italian physicians, that quinin may of itself produce hematuria. This theory I believe to be wholly groundless, and it certainly is not maintained by physicians of to-day." Dr. Guiteras says that in his experience in Cuba he met with no such cases.

Dock, formerly of Texas, but now of Michigan, says that within the last few years, the subject of hematuria from quinin has been brought up again by physicians in Greece and Italy, but the unusual consequences of quinin in the hands of these men make it almost certain they did not have to do with malarial hematuria.

Consensus of Opinion Regarding the Use of Quinin in Malarial Hemoglobinuria.—Dock (1892): "The treatment of malarial hematuria, which also includes hemoglobinuria, belongs really to the treatment of acute and chronic malarial poisoning. No American physician at the present time has any doubt about the propriety of giving quinin in these cases, so that a consideration of that vexed question is unnecessary."

Thompson (1893) advises that quinin be given hypodermically in this condition.

Osler (1895): "In quinin we possess a specific remedy against malarial infection. In cases of estivo-autumnal fever with pernicious symptoms it is necessary to get the system under the influence of quinin as rapidly as possible. In these instances the bisulphate or muriate of quinin and urea should be administered hypodermically."

Laveran (1896): "It should be insisted upon that in grave forms of malarial fever, and in the continual types of malarial fever one should not

wait for the intermissions or even the remissions for the administration of quinin." Laveran uses quinin by the mouth and hypodermically, preferring for the latter on account of its solubility the chlorhydrosulphate (5 grains of which can be easily dissolved in 15 minims of water).

Dawson (1896): "The treatment of the different forms of malarial hematuria may vary somewhat as to detail, but our first effort should be to bring the patient as rapidly as possible under the influence of quinin in some form, so as to control the destructive power of the malarial germs, thereby holding the cause of the hemorrhage in abeyance, if not able to remove it completely." Dawson further states that he has used quinin in very large doses in malarial fevers, and has continued its use for long periods, and has never seen it produce hemoglobinuria.

Tyson (1897) recommends quinin in malarial hematuria, and believes that this symptom is due to another cause than quinin.

Anders (1897) says that he has observed several instances of hematuria in the milder forms of malaria in which no quinin had been taken and in which it had subsequently been given (16 grains daily) with the result that the hemoglobinuria had been relieved.

Since 1887, at the St. Louis Southwestern Railroad Hospital of Tyler, Texas, several hundred cases of malarial fever have been annually treated. It is the routine practice there to administer quinin both in *small* and *large* doses (2 to 30 grains) by the mouth and hypodermically, as the case may demand, and it is not known that any case of hemoglobinuria developed from its use. Further, since the year ending June 30, 1893, there were five cases of malarial hemoglobinuria admitted to the wards—in all of which the patients received quinin; in no case was the condition made worse by quinin, and all of the patients recovered.

THE USES AND LIMITATIONS OF NUCLEIN AS A THERAPEUTIC AGENT.

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PERHAPS nothing can demonstrate more fully the heterogeneous tendency of the medical thought of our age, than a careful perusal of current literature upon the action and uses of nuclein. While a few patient and careful observers like Vaughn, Metchnikoff, and Ames are earnestly working to demonstrate its sphere of usefulness as a therapeutic agent, scores of others, with no guide or aim than that of the grossest empiricism, are extolling its application in the most diversified and conflicting conditions. I well remember the hopes which some of these gushing opinions inspired in me, and the several failures which resulted from my early exhibitions of this agent, but, although I had several startling failures, I was often rewarded with signal success, and it was a careful review of these several successes and failures which led me to believe that nuclein, like every other remedial agent, has its uses circumscribed by clear-cut limitations. In this connection, I record the following case:

CASE I.—Mrs. S., aged forty-nine years, came to me presenting the appearance of an emaciated, overworked woman. She was the mother of seven children born in rapid succession. She had always attended to her household duties, working from early in the morning until late at night. While her family and personal history were all that could be desired, her sunken eyes, anemic and pinched face, bloodless lips, cold hands, and irregular heart-action, with its hemic murmur, all bespoke the impoverished condition of her blood. I examined her urine, and found that she daily passed about 1500 c.c. of urine, which was pale and clear with no other abnormality than that the phosphates were increased to sixteen per cent. Examination of the blood revealed the red corpuscles reduced to 3,200,000 to the c.m. (Thoma-Zeiss), poikylocytosis well marked, the red cells taking the stain badly (Ehrlricke), and leaving round hyaline spaces within the corpuscles. There were no nucleated red cells or other abnormal cell formation; hemoglobin seventy-five per cent.; the number of leucocytes was 8400 to the c.m., and they were normal in every respect, except, perhaps, a slight increase in the number of eosinophiles. With this history and clinical finding I prescribed nuclein, with the result that I allowed this poor woman to remain six weeks in this condition, carefully examining her blood three times weekly, with no other result than a marked leucocytosis which in no way relieved the anemia. A six-weeks' course of iron and arsenic almost completely restored her health.

After this failure I made a number of blood-counts, fifty in all, exhibiting nuclein in each case with the idea of determining its action upon the red blood-cells, and not in one instance, after repeated countings, did I find any abnormal change either in character or numbers except a slight variation which might be expected. Thus, I came to the conclusion that nuclein in simple anemia, or in fact pernicious anemia, *unless complicated* either by *qualitative* or *quantitative alteration of the leucocytes*, has no influence whatever. Yet, almost daily I read reports of all forms of anemia in which treatment with nuclein has been successful, and one writer even goes so far as to claim poikylocytosis as a special indication for its use. Still I have found instances of complicated anemia in which great benefit resulted from its administration, as the following case will illustrate:

CASE II.—Bertha D., age twelve years; previous

health and family history excellent. Her general appearance was bad; face, pale and wan; lips, colorless; deep circles under her eyes; hands and feet cold, etc. There was a hemic murmur. The cervical glands were swollen, one being in a process of suppuration, discharging thin pus, and showing little tendency to heal. Examination of the blood showed hemoglobin 49 per cent., red cells 3,600,000 c.m., normal in shape, but presenting end-globular changes characterized by hyaline spaces within the cells, as described by Maragliano. I also found a deficient leucocytosis; there were but 4000 white cells to the c.mm., the reduction being more appreciable with respect to the polymorphonuclear leucocytes. In this case the anemia was evidently the result of a ptomain toxemia, and on this belief I prescribed nuclein; and whether future investigation proves the phagocytosis theory of Metchnikoff to be true or false, the fact remains that the number of polynuclear and mononuclear leucocytes increased to such an extent that at the end of one week the blood-count showed the red cells to be 4,300,000 to the c.m., and the white cells 10,000 to the c.m., the increase being manifested in regard to the polynuclear and mononuclear leucocytes. The suppuration ceased, and the little patient made a good recovery.

The next case presents to my mind a clear-cut picture of the indications for the use of nuclein.

CASE III.—John G., aged twenty-five years; occupation, clerk in the post-office; family history good; general appearance fair. Two years before he had had laryngitis from which he had recovered. His health had been good since, with the exception of slight attacks of bronchitis. April 8, 1897, he became ill with measles, which ran its usual course up to April 16th, when he had a chill followed by fever and pain in the side; in fact, he presented the usual clinical picture of pneumonia. The area of dulness extended from half an inch below the right nipple downward. His temperature was 103 F.; pulse, 120, weak and compressible; urine, normal, there being no appreciable diminution of the chlorids. Blood examination: red cells normal, 5,000,000 to the c.m.; leucocytes 7000 to the c.m., the tongue was dry and the bowels constipated. The expectoration was rust-colored, containing streptococci and pneumococci. I prescribed $\frac{1}{60}$-grain of strychnin every three hours. The condition remained practically the same until April 21st. The temperature was now 104° F. (evening), and the pulse was soft and compressible and oscillated from 100 to 130 per minute. The heart-action was weak and not very regular, and the local condition remained unchanged. The tongue was dry and brown. There was muttering delirium. The urine contained a slight trace of albumin and a few denuded, round epithelial cells and blood shadows; there was a very slight decrease of the chlorids. The urine was strongly acid in reaction and swarmed with very motile bacilli.

I made an inoculation from the urine on agar-agar, and after twenty-four hours obtained a culture. The culture and morphology of the bacillus resembled that of the bacillus coli communis, and upon further investigation I found that it caused fermentation of glucose, coagulated milk, clouded bouillon, and produced indol. I therefore felt safe in pronouncing it the coli bacillus. Blood-count: red cells, 5,000,000 to the c.m.; white cells, 6800; hemoglobin, forty-five per cent. The general appearance of the patient was bad. There was diarrhea, the bowels moving four times within twenty-four hours. There was also ilioccecal gurgling and tenderness; Widal-test negative. I prescribed strychnin, 1/20-grain every four hours.

April 22nd. Temperature, 104° F.; pulse, 120, very weak and somewhat irregular; tongue, dry and brown; patient delirious and restless through the night; local condition unchanged; urine contained albumin and a few more round, denuded epithelial cells than the day before; chlorids somewhat diminished; reaction acid, and coli bacilli still present. Blood-count: red cells, 4,000,000 to the c.m.; white cells, 6780 to the c.m.; the polymorphonuclear cells presented a very peculiar appearance. The nuclei were pale, granular, and not well defined, the the protoplasm of the cell being filled with granular dots and the limiting membrane broken in places. In some of the cells the protoplasm was altogether deficient. Others again were deficient in limiting membrane, amorphous in appearance, and contained degenerated nuclei and protoplasm, resembling a cross between a myelocyte and an eosinophilocyte, but still not like eosinophilic-myelocytes.

I prescribed Auld's nuclein, two tablets every two hours, and the strychnin as before.

April 23rd. There was but little change in the patient's condition, except that his pulse was more regular; the diarrhea still continued, the stools being yellowish. The condition of the urine was unchanged. Blood-count: hemoglobin, fifty per cent.; red cells 4,500,000 and leucocytes 7500 to the c.m.; the polymorphonuclear cells presented the same appearance as the day before, but there were several very large polynuclear cells containing degenerated nuclei, and presenting somewhat the appearance of eosinophiles, and on this day, for the first time, I noticed very numerous granules scattered throughout the blood plasma. These were round refractive bodies similar to those described by Müller, and the addition of a one-per-cent. solution of acetic acid did not destroy them. After observing a fresh specimen of unstained blood for over an hour I felt very sure that I saw one of these granules escape from a polynuclear leucocyte.

April 25th. Patient's general appearance better; he rested much better through the night; the pulse was 100 per minute and regular; temperature, 102° F.; urine, free from albumin, and the coli bacilli was rapidly disappearing; tongue more moist; no diarrhea. Blood-count: red cells 4,800,000 to the c.m.; white, 8500 to the c.m., being mostly mononuclear leucocytes. The polynuclear cells were very small, and had distinct nuclei. The granules of Müller were more marked than the day before.

The local condition was beginning to show signs of resolution.

April 30th. The temperature was normal; pulse, 80, regular and steady; urine normal; tongue clean; dulness still continued, but subcrepitant râles were heard over the affected area. Blood-count: 4,900,000 red cells to the c.m.; white, 12,000 to the c.m. Nuclein and strychnin were the only medicines employed. The patient made an uninterrupted recovery.

From a careful study of nuclein, *per se*, its origin, chemistry, and physiologic action, and from careful blood examinations in not a few cases, I am convinced that the one great indication for the exhibition of this agent is *deficient leucocytosis*, and that its only therapeutic property is its power to augment the number of leucocytes, thereby producing a protective leucocytosis, and, therefore, the only sure and safe guide for its exhibition is a careful examination of the blood in each and every case.

THE PRELIMINARY CONDUCT OF INTESTINAL OPERATIONS.

By R. HARVEY REED, M.D.,
OF ROCK SPRINGS, WYOMING.

AMONG the many details essential to success in intestinal surgery are the preliminary preparations, and in regard to these it may be said that custom makes law, and law is binding because nearly every one conforms to it. I think this applies to intestinal operations, and at the same time I think that many of us have respected a particular law, the result of custom, without ever stopping to consider the relations between the physiologic effects of certain drugs used in these preparations and the pathologic conditions for the relief of which operative interference is proposed. For example, in intestinal obstructions, there are few diagnosticians who are able to tell prior to an exploratory incision the exact condition which has caused the trouble. The symptoms may indicate obstruction beyond any question, but who can say whether it is the result of an enterolith, cicatricial constriction, invagination, volvulus, or even paralysis. It is a common custom not only to resort to the use of cathartics in intestinal obstructions, but to continue their use until not only the entire alimentary tract above the obstruction is intensely irritated, but also until the muscular and serous coats are congested. As a result the intestines are oftentimes found in an acute inflammatory condition, with the presence of exudates and transudates in abundance.

Experience has led me to believe that the continued use of cathartics in any form of intestinal obstruction, not even excepting impaction, is injurious and unfits the patient for the ordeal of operation. The mildest cathartic is a stimulant to the glands of the intestinal mucous membrane, and as such is intended to increase the secretions and at the same time exaggerate the peristaltic action. If the use of cathartics is persisted in we are bound to set up a *vis a tergo*, resulting in stercoraceous vomiting, and whenever that occurs, we know we have reverse peristaltic action, together with an obstruction of some kind, prohibiting the onward movement of the intestinal contents through the natural channel. This being the case, what reason is there, either from a physiologic or pathologic standpoint, for increasing this peristalsis by administering drugs intended for that very purpose?

The use of opiates may allay the pain, but will surely mask the symptoms, and thus not only lead the patient and his friends astray, but the physician as well. Again, false hope may be engendered when the obstruction has continued sufficiently long to produce paralysis or gangrene; in either case, the pain subsiding, the patient imagines he is better, and not infrequently the attending physician is similarly misled by these very serious and usually fatal symptoms.

I am sure there is not a general surgeon who has not repeatedly operated for intestinal obstruction and found the bowel congested or possibly necrotic and distended with secretions. This, of course, may occur in cases in which there has been no irritation of the mucous membrane by medication, but in my experience, I have found less congestion, less secretion, and less dilation when cathartics have not been used. If this is true in the experience of others, we should be guarded in the use of laxatives, and especially in the use of drastic cathartics in all cases of intestinal obstruction.

I recall three cases of fecal impaction, in one of which the intestinal tract was obstructed by cherry stones to such an extent that nothing but mechanical interference could give relief. In the other case the obstruction was caused by hardened feces, necessitating operative interference, and in a third case there was an obstruction by a large enterolith which had lodged at the ileocecal valve and produced complete obstruction. According to text-book teaching and "custom," in the cases referred to, patients were all given cathartics irrespective of stercoraceous vomiting and intense intestinal pain. From irritation by these drugs the bowels were distended with secretions and were congested to such an extent as to produce profuse transudations, in several instances exudations, placing each patient in a perilous condition without in the least relieving the obstruction.

The argument against the use of cathartics also holds

true in circular constriction of the bowel, whether of malignant or cicatricial origin. It also holds true where there is an obstruction by adhesive bands, volvulus, or invagination, and I wish to enter my protest against the persistent use of cathartics in any and all of these conditions: (1) for the reason that as a rule they fail to relieve intestinal obstruction; (2) because they produce unnecessary congestion and irritation of the intestinal tract and thus place the patient in still greater peril, and (3) for the reason that operative interference becomes more dangerous, because of the irritation produced by their use.

There are exceptions to all rules, but these exceptions only tend to prove the rule, and, while I believe that the persistent use of cathartics is usually injurious to the patient and as a rule fails to relieve the obstruction, it is true that occasionally there are cases of severe obstruction in which recovery follows their use. Among these exceptions, I might mention two cases in which the obstruction was caused by invagination and in which, after from fourteen to twenty days of absolute obstruction, the invaginated portion of the gut became necrotic, sloughed out, and escaped with a gush of feces, the patients ultimately recovering. Notwithstanding occasional exceptions, I am still of the opinion that it is not to the advantage of the patient with obstruction to continue the use of laxatives, and much less the use of drastic cathartics.

The fact that when given continuously cathartics produce irritation and oftentimes inflammation of the intestinal tract, even in patients who are not suffering from obstruction, is to my mind sufficient evidence that they should not be so employed, especially in the affection under consideration. Such a course adds a serious complication to the existing pathologic condition, which we, as physicians and surgeons, should strive to avoid.

It must be conceded by every operator that the less the irritation of the intestinal tract, as well as of the intestinal and parietal peritoneum, the more favorable the prognosis. This being true, it is quite evident that a patient who must submit to an operation for the relief of intestinal obstruction is placed in a position of greater danger when the entire intestinal tract above the obstruction is irritated by laxatives and especially by drastic cathartics. Under these circumstances, the surgeon must contend not only with inflammation, but also with the increased amount of material in the intestines which has resulted from the use of cathartics, to say nothing of the increased peristaltic action, which, of course, must interfere with any operation that necessitates incision of the intestine. It is an indisputable fact that increased peristaltic action has a tendency to retard repair of intestinal wounds, as the continued shaking up of a fracture retards the repair of the bone. With this in mind, it is highly important that the intestinal tract should be as nearly immobilized as possible after an operation, and kept so until the process of repair have sufficiently advanced to make it certain that there will be no extravasation of intestinal contents into the abdominal cavity.

For the reasons given I feel that I am justified in protesting against the use of cathartics prior to operations upon the intestinal tract, and also in insisting that only remedies should be used which have a tendency to empty the intestinal canal without leaving the bowel in a state of irritation to complicate the dangerous operation which may soon be necessary.

To reiterate my position I maintain that in all cases in which intestinal obstruction is suspected and in which the use of mild laxatives, together with enemas and massage, fails to give relief, the employment of drastic cathartics should be guarded against. I believe it is much safer to make an early exploratory incision, if need be, to determine the diagnosis than to continue the administration of drugs which may cause inflammation, a serious complication we should always seek to avoid.

RHINITIS FIBRINOSA, INCLUDING A BACTERIOLOGIC AND HISTOLOGIC EXAMINATION OF CASES.

BY GEORGE L. CHAPMAN, M.D.,
OF CHICAGO;
ASSISTANT IN PATHOLOGY AND IN LARYNGOLOGY IN THE CHICAGO POLYCLINIC.

THE subject of rhinitis fibrinosa is as a rule very briefly if at all, treated, in such text-books as might be expected to contain a detailed account of it. This disease was recognized and described by B. Fränkel, Hartmann, Seifert, and others. It is referred to under a variety of names, *viz.*, croupous, membranous, fibrinous, primary pseudomembranous, plastic and fibrinoplastic rhinitis, and nasal diphtheria. Rhinitis fibrinosa is not a common disease; therefore, when observed, it deserves more than passing notice. It is characterized by an acute inflammation with a fibrinous exudate limited to the nasal cavities. The symptoms are usually benign, the most distressing being sudden nasal occlusion, necessitating almost constant oral respiration, mucopurulent discharge, and a somewhat chronic course.

The etiology of this form of nasal disease, as has been demonstrated by careful study, is not uniform. A few years after it had been generally recognized that the cause of a certain form of primary faucial diphtheria was the Klebs-Löffler bacillus, this micro-

organism was looked for, and found to be present in a large percentage of the cases of rhinitis fibrinosa in which a bacteriologic examination was made. Concetti was the first to call attention to the contagious nature of the disease, and he recommended isolation and disinfection. The first authors who undertook the bacteriologic examination of cases of rhinitis fibrinosa were Gradenigo and Maggiore. They claimed that the staphylococcus pyogenes aureus was the cause of the affection. Lieven isolated a staphylococcus which he claims is similar to the staphylococcus pyogenes aureus, but not identical with it. It is distinguished from the staphylococcus pyogenes aureus by some cultural features and by its lesser virulency. Abel did not find the diphtheria bacillus, but isolated pneumococci having a very mild degree of virulency.

Abbott reports three cases in which he found the diphtheria bacillus. His work is of special interest because of its thorough character. In two of his cases he found a bacillus similar to that of true diphtheria, but of lessened vitality. In the other case the bacillus found could not be differentiated from the typical diphtheria bacillus. M. Ravenel, in an investigation of ten cases, followed Abbott, and found in all but one a bacillus similar to the Klebs-Löffler bacillus, except for a lessened vitality and virulency. In one case, he found a bacillus which could not be differentiated from the true virulent, diphtheria, bacillus. Bluder examined six cases, finding the diphtheria bacillus in all. Buys examined one case, finding the diphtheria bacillus. D. Braden Kyle reports two cases in which he found the staphylococcus aureus; he described the exudate as organized, laminated, fibrinoplastic.

The most extensive bacteriologic study of rhinitis fibrinosa was made by Meyer, who investigated thirty-one cases. He found that rhinitis fibrinosa may be caused by the diphtheria bacillus, but also by streptococci and staphylococci. In spite of the difference in the bacteriologic findings there was no material variation of the clinical course in his cases. In his excellent paper he calls attention to the fact that "a bacteriologic examination with reference to an exudate found in the nose must of necessity be frequently misleading, since the nasal cavity is normally the habitat of a variety of micro-organisms, among which is also found, occasionally in health, the diphtheria bacillus, which then may be obtained in culture without being the true cause of the disease."

Somers reports an interesting case in which the first culture did not show the diphtheria bacillus, though a subsequent culture revealed its presence. In this instance the disease was characterized by mild symptoms, although two other members of the same family became severely infected, one with laryngeal and the other with faucial diphtheria.

As is well known, a fibrinous exudate is frequently found after operations in the nasal cavity, especially after cauterization of the turbinate bodies.

Experiments to artificially produce rhinitis fibrinosa in man have been made only by Lieven, who, as stated before, claims that a specific staphylococcus is the cause of this affection. His experiments, while carefully made under the supervision of Seifert in Würzburg, have not yet been confirmed by others.

In view of the uncertain character of a bacteriologic examination in rhinitis fibrinosa, it has not been made the main feature of investigation in the cases to be reported in this paper. It may be at once stated that the diphtheria bacillus was not found in any one of them. Recently the nature of the exudate in bronchitis fibrinosa has become a matter of controversy. Beschorner, and also Grandy, have lately claimed that in bronchitis fibrinosa the casts consist of mucin, while in two cases examined by Herzog, the fibrinous nature of the exudate was demonstrated. It therefore appeared of interest to study the exudate in rhinitis fibrinosa to determine, if possible, its true nature. A satisfactory histologic examination cannot be easily made in each and every case; since it is difficult to obtain from the nasal cavity a piece of the pseudomembrane without crushing it in such a manner that it becomes useless for examination purposes.

Case I.—R. J., male, aged six years, was brought to the nose and throat department of the Chicago Policlinic, Dr. M. R. Brown's clinic, October 4, 1897, complaining of nasal stenosis. The patient's temperature was normal. On examination, a dirty-white membrane was found, occluding both nasal cavities. The membrane extended over both the turbinate bodies and septum, beginning anteriorily about the mucocutaneous margin, and extending posteriorly, but limited to the nose. The boy's mother stated that he was restless and feverish at night, and had some discharge from the nose. On further inquiry it was found that the patient had had diphtheria some two years before, and that an older child was just recovering from an attack of sore throat—in all probability a follicular tonsillitis. The family was a large one, but there was no further contagion. A raw and bleeding surface was left upon the removal of a portion of the membrane for cultural purposes. A clinical diagnosis of rhinitis fibrinosa was made, and the following treatment instituted: Internally, an iron tonic, and locally, an alkaline cleansing wash, followed by insufflation of nosophen. The disease continued about three weeks, with more or less mucopurulent discharge. On examination of the culture a large staphylococcus was found. Its growth on agar-agar at ordinary room temperatures was dry,

having a ragged margin and a distinct fetor; on gelatin; liquefaction was produced.

CASE II.—M. M., male, aged ten years, came under observation, October 11, 1897, suffering from nasal trouble. On examination a dirty-white membrane was found, anteriorily covering the septum and turbinate bodies. The posterior rhinoscopic image showed a similar condition, with a moderate hypertrophy of Luschka's tonsil. The membrane was confined to the respiratory region of the nasal mucous membrane as in the former case. A raw and bleeding surface was left upon the removal of a portion of the membrane. The submaxillary and cervical lymph-glands were swollen, simulating the collar of brawn of scarlet fever, but were not tender. The swollen condition of the glands continued about three weeks. The temperature was slightly elevated (99° F.), and the mother of the patient stated that he had been feverish and restless at night and had complained of some frontal headache during the previous three or four days. Most of the distress was caused by the nasal stenosis. The history revealed no immediately preceding sickness which would account for the trouble. The illness continued benignantly, with a mucopurulent discharge, for about four weeks. No history of contagion could be obtained, although the patient was in almost constant contact with a brother. A clinical diagnosis of rhinitis fibrinosa was made, and treatment instituted as in the former case. The following day the patient returned for a bacteriologic examination. The membrane in this case was fortunately very readily removed with very slight hemorrhage, and cultures were made. The culture on agar-agar showed a staphylococcus and a species of saccharomyces. The growth on gelatin did not cause liquefaction.

Of the membrane obtained in this case, part was at once transferred to absolute alcohol; another part, without being subjected to any other treatment, was exposed to the action of dilute acetic acid, and a third portion, to that of artificial gastric juice. Dilute acetic acid caused the membrane to become almost perfectly transparent; at the same time there occurred on carefully shaking the test-tube without breaking up the membrane a very slight turbidity in the fluid. The result of this experiment showed that the membrane largely consisted of fibrin mixed in some way with a small amount of mucus. Exposed to the action of artificial gastric juice, the membrane within a few hours was almost completely digested. There remained only a very small, hardly appreciable, amount of undigested residue. This likewise proved the fibrinous nature of the exudate. The piece of membrane hardened in alcohol was subsequently embedded in paraffin and sectioned. The sections were studied with Gramm's, Weigert's, Altmann's, and a hematoxylin stain. The mass of the exudate, as shown by the study of the sections, consisted of numerous, mostly polymorphonuclear leucocytes, a few epithelial cells, some cocci, and some indefinable débris; all of these elements were embedded in a dense fibrillar network. This network stained violet with hematoxylin, a beautiful blue with Weigert's fibrin stain, and red with Altmann's acid-fuchsin-picric-acid stain.

CASE III.—T. C., male, ten years, presented himself for treatment, November 26, 1897; temperature normal. On examination a dirty-white membrane was found covering the septum and turbinate body of the right nasal cavity only; there was also present a deflection of the septum to the right. The patient's mother stated that he complained of some nausea and had a slight fever three days before, and was also greatly distressed because of the limited amount of nasal respiration permitted, which made him restless at night. Pieces of the membrane were removed, leaving the characteristic raw and bleeding surface. There was no history of contagion and no further symptoms of importance developed except a more or less mucopurulent discharge, the case continuing benignantly. A clinical diagnosis of rhinitis fibrinosa was made in this case, and similar treatment applied as in the previous cases. From the membrane removed cultures were made and a staphylococcus found. The growth of the staphylococcus on agar-agar was moist and somewhat yellow. On gelatin, an extensive liquefaction was produced. Only small pieces of the membrane could be obtained in this case, but enough was secured to make the chemic tests, and a small part was hardened for sectioning as in the preceding case. Dilute acetic acid caused the membrane to become almost transparent. Artificial gastric juice caused an almost complete digestion within a few hours, with only a small amount of residue. The mass of the exudate was again proved to consist of numerous polymorphonuclear leucocytes, a few epithelial cells, cocci, and some indefinable débris, all embedded in a dense fibrillar network. This network stained blue with Weigert's and red with Altmann's stain. The stains employed, as well as the chemic tests, proved beyond a doubt that the great bulk of the exudate, as in the previous case, consisted of fibrin.

In conclusion, it is my agreeable duty to sincerely thank Dr. M. R. Brown for permission to publish these cases from his clinic, and also to thank Dr. Maximilian Herzog, director of the Pathologic Laboratory of the Polyclinic, for his assistance and direction in the examinations.

OROPHARYNGEAL MYCOSIS.[1]

BY R. P. LINCOLN, M.D.,
OF NEW YORK.

OROPHARYNGEAL MYCOSIS is a parasitic disease which is not infrequently found in the deep parts of the oronasopharyngeal cavity, and was first described by B. Fränkel of Berlin in 1873, under the name "mycosis tonsillaris benigna," and later by Hening as "pharyngomycosis leptothrica."

I have selected this subject for discussion be-

[1] Read at a meeting of the Harvard Medical Society of New York, March 26, 1898.

cause it is more likely to be observed by the general practitioner than by the specialist. The now well-known nature of the disease proves it is not of recent origin. That it has so long been overlooked is evidence that its consequences are not often serious, that it has been confounded with another affection, and that it must frequently disappear spontaneously. That it is not very uncommon is evidenced by three cases which came under my care about three months ago.

Of these cases, two were in males and one in a female. The patients were in middle life, in excellent general health, without constitutional taint, and free from other disease, being neither dyspeptics nor having rheumatic or gouty diatheses, and being free from catarrhal troubles. Two of the patients were residents of this city. In neither of these, so far as I could determine, had a correct diagnosis been previously made. The female patient had been treated in Paris last summer for what she was told was follicular tonsillitis, but without relief of her trouble, which she first noticed when in Italy last June. One of the male patients had been treated locally with sprays and gargles, and had himself used them six months without result; the other had depended upon internal medication and gargles irregularly for a year and a half, having spent a greater part of that time in Asheville and the Adirondacks, caring for an invalid wife, and thus under favorable climatic conditions.

I know of no definite statistics of the duration of this disease, but we must accept in one of these patients a period of a year and a half. Dr. Wright cites a case of two-and-a-half-years' duration, and Dr. Mulhall had one under observation six years.

There were certain objective appearances common in all the cases and characteristic of the affection. These are included in the following description: The disease involved the tonsils and the base of the tongue, the latter being the site of many tufts of the growth, at least thirty or forty. In one case, the growth was present on the soft palate and the post-pharyngeal wall, with two or three tufts in the inter-arytenoid space, and on the epiglottis. On inspection there were observed, apparently covering or protruding from the orifices of the mucous follicles, yellowish-white patches or plugs, fungoid in appearance, which are literally a collection of growths. They vary in size from a thread in diameter to perhaps a line, and sometimes, by coalescing, form patches as large as one's finger-nail. They are moist and soft to the touch, and usually removed or broken off on a level with the mucous membrane by moderate friction, to be reproduced during the following twenty-four or forty-eight hours. When the superficial or protruding mycotic growths are thus removed, there is not left behind that clean, smooth surface which we find when we express a cheesy, cretaceous mass from a mucous crypt; on the contrary they are more or less adherent, and it is frequently necessary to seize the projecting fimbriate mass with forceps and exert considerable force, as evidenced by a few specks of blood at the seat of implantation.

The study of a single case, even without the microscope, ought to convince one that the growth is implanted, not upon the superficial mucous membrane, but upon the lining of the canicular and mucous follicles and in the depressions between the folds of nasopharyngeal lymphoid tissue. Often where the point is favorable for examinatian a lacuna can be seen distended with the growth beyond its normal caliber.

There is not yet a uniformly accepted opinion as to the etiology of mycosis; its origin and specific nature are *sub judice*. Different fungi are found in the extruded masses, but leptothrix buccalis is acknowledged to be always present. Besides this leptothrix, we also find oidium albicans, the micro-organism of nigrities linguæ, a sarcina, and the aspergillus fumigatus, and others. Among predisposing causes the following have been claimed by almost as many different investigators: catarrhal inflammations; mouth-breathing; rheumatic diatheses manifested by tonsillitis, dyspepsia, acidity of the saliva; damp habitations; unhealthy skin; dental caries; neglect of mouth cleanliness thus favoring calcification in the presence of alga leptothrix—leptothrix buccalis seems to be always present in the mouth. Considering that leptothrix buccalis predominates in the morbid product, it may be not irrational to conclude that as the soil has become favorable by a certain degree of inflammation, the spores of the leptothrix find lodgment in the mucous crypts and develop more rapidly than under ordinary circumstances; and that these bundles with their products, though other fungi may be associated with them, constitute the disease.

The subjective symptoms are almost never pronounced. They consist of a tickling or rough feeling, sometimes causing a cough or choking, which in turn results in an unavailing effort to clear the throat. There also may be a sense of dryness or burning. Pain, from a consequent inflammation is said to be sometimes present. I have never seen an instance. The affection is more often annoying than dangerous, through E. Fränkel claims the fungus may be destructive to the tissue upon which it grows, and reports a case of penetration of the tonsil to a depth of several millimeters.

If there is any doubt in diagnosis, the microscope should be used. My friend, Dr. Jonathan Wright,

whose painstaking investigations are well known, has generously furnished me with the following account of the result of his recent microscopic work on this subject:

"Sections of the piece of lingual tonsil submitted to me for examination were made in such a way that they fell through the lacunæ containing the mycelial tufts. Staining with hematoxylon-eosin shows the mycelial threads or straws lying in close apposition with the thickened epithelial lining of the crypts. Desquamated epithelial cells are seen among the straws. With this stain the spores are not differentiated. I cannot discover in this specimen or in others which I have hitherto examined any evidence of the mycelial threads penetrating the subjacent tissues, or even of being fairly within the epithelial layer. With the eosin stain, however, may be seen, close to the crypt, fibrous tissue with long straight fibers which resemble somewhat the mycelial threads, but when the gentian-violet stain with the Gram-iodin decoloration is used, it is seen that the epithelial straws are sharply defined from the tissues, and there is no appearance of their having penetrated into them. Kelly claims, however, that in some cases this is noted. It is possible, though I will not venture a positive assertion on this point, that his stains have deceived him as intimated above.

"Both Kelly and Siebenmann assert their belief that the thickening of the epithelial lining of the crypts is the initial lesion and the mycelial growth a secondary phenomenon. This assertion I am also not at present in a position to positively controvert, but I am strongly of the opinion that this so-called 'keratosis' is merely the result of the irritation of the presence of the mycelium. As for the assertion that no evidence of inflammation is found in the lymphoid tissue, this I am still more disinclined to accept. Not only is this not in accord with the usual clinical appearance and history, but hypertrophied lymphoid tissue is itself evidence of, and the product of inflammation, while the existence near the crypts of the extra amount of fibrous tissue spoken of above is a still further evidence of the chronic inflammatory process. Such a 'keratosis' we get upon the mucous membranes wherever friction or other irritative influences are at work. Nasal polypi at the point where they rub the septum, atrophic rhinitis with crusts, the nasal mucous membrane when it is bathed in the ichorous pus which flows from the suppurating accessory sinuses, the pachydermia verrucosa of the posterior wall of the larynx in drinkers and in phthisical patients, the tips of the lingual lymphoid hypertrophies in adult patients—all these show quite as much 'keratosis' as does the epithelial lining of the crypts filled by the threads of the leptothrix buccalis.

"The specimen stained with gentian-violet and Gram's iodin shows among the leptothrix threads the presence of another fungus, the so-called 'bacillus maximus buccalis.' The gentian-violet stain also brings out enormous numbers of spores, grouped in irregular masses outside of the mycelial straws, but also here and there they are seen enclosed within the lumina at irregular intervals. They are very minute, some of them much smaller than the smallest micrococcus. Now, between these two forms, the minute spores and the full-grown mycelial threads or straws, are all degrees of involutionary forms, including those indistinguishable in size and appearance from various bacilli—all deeply stained with the gentian-violet. The same may be noted of the 'bacillus maximus' and its spores stained with the iodin."

Treatment. — Mycosis may disappear spontaneously, though its usual course is very persistent. As is usually the case when no treatment is satisfactory, many methods are advocated. I will enumerate a few: Attention to the general health; local use of chlorate of potash, borax, absolute alcohol, lactic acid, chlorid of zinc, perchlorid of iron, iodin and its compounds, bromid of iodin, chromic acid, nitrate of silver, solution of bichlorid of mercury; curetting or forcibly pulling out the filaments, followed by the use of some astringent, as nitrate of silver; excision; a course of sulphur waters; application of pyoctanin, and last, the galvanocautery. Each has had its advocates; none is satisfactory, but the last is probably the most useful. At present I rely upon the galvanocautery and pyoctanin. With these two means, and perseverance, patients will recover, but perhaps as my friend Dr. Wright says, "not because of them." I must confess, however, I am not now willing to accept his conclusion.

A few words about the application of these remedies. The treatment must be radical—all the deposit must be destroyed and the surface from which the leptothrix develops changed. If the points of disease are few and favorably located, as on a tonsil, they may be excised and the trouble at once eradicated. The galvanocautery is also applicable in such cases; even when a considerable number of growths are present it is effective, the objection to it arising, when too freely used, from the degree and extent of inflammation it may cause.

The following extract from a paper on "The Uses of Pyoctanin," read by me before the American Laryngological Association in 1891, still expresses my opinion of its advantages: "Pyoctanin is a powerful germicide. It is odorless, almost tasteless,

non-poisonous, slightly anodyne, and non-irritating. It does not coagulate albumen, has great penetrating and disseminating power, and hence, does not form a protecting shield about diseased germs. It rapidly destroys bacteria." In using it, after freeing the points to be treated as far as possible of mucus and protruding filaments of growth, the pure powder should be rubbed thoroughly for several minutes upon and into the lacunæ. This process should be repeated at short intervals, daily for a while, until the reappearance of the growth ceases. An intelligent patient can without danger contribute to the success of the treatment by spraying a solution of the remedy upon the diseased surfaces.

MEDICAL PROGRESS.

Venesection in Uræmia. — Laache (*Deutsch. Med. Wochenschr.*, March 3, 1898) is an advocate of simple venesection without infusion of saline solution in cases of uremic intoxication with increased arterial pressure. The quantity of blood withdrawn by him has been in general from 500 to 600 grams (16 to 20 ounces). In some instances of anuria he has withdrawn twice this quantity.

Extraction through the Mouth of a Plate Lodged in the Esophagus.—White (*Vir. Med. Semi-monthly*, March 11, 1898) was asked to see a patient who two months previously had swallowed a plate bearing one central upper incisor tooth. The plate had lodged opposite the cricoid cartilage, and the man was unable to swallow anything but liquids. At first White was unable to pass any instrument, but on the second day a slender uterine probe passed the plate, and by applying cocain to the esophagus on a swab, it was possible to pass a bougie 4 mm. in diameter. This treatment was continued daily, as esophagotomy was rejected on account of its considerable mortality. After four-days' trial a forceps was passed beyond the plate and the latter was turned partially around, though not extracted. On the seventh day a bristle-probang was passed and by its withdrawal the plate was extracted. The symptoms due to the long presence of the plate seem to have been very slight, and they quickly subsided after its removal.

Recurring Attacks of Vomiting of Eighteen-Years' Standing Cured by Division of Adhesions.—Naylor (*Indian Med. Rec.*, February 1, 1898) gives an account of a case of recurring attacks of vomiting in an unmarried woman aged forty-four years, which had continued eighteen years in spite of all treatment. As food was frequently ejected after some hours' retention in the stomach, the diagnosis of pyloric stenosis was made and a laparotomy was performed, the operator expecting to relieve the stricture by a pyloroplasty. The pylorus was not constricted in any way, but there were adhesions between the stomach and the colon, as well as between the pylorus and the liver. The former were divided, but the latter were too deep down to permit of easy division, and through fear of hemorrhage they were left. The patient made a complete recovery, and was not thereafter troubled with vomiting. While adhesions may not be a common cause of uncontrollable vomiting, yet they are sufficiently common to receive consideration.

Hemorrhage from an Atonic Uterus.—Arendt (*Therap. Monatsheft.*, January, 1898) says that in post-partum hemorrhage from an atonic uterus, tamponade of the organ is the most rational treatment. It has without doubt saved many lives since the directions for its employment were first given by Dührssen. It carries with it, however, a certain risk of infection, and there is of necessity a slight delay in its application which is harrowing to the patient. He therefore advises in all cases of alarming hemorrhage, that the cervix be grasped with a couple of strong forceps and pulled firmly down. The traction alone is often sufficient to completely shut off the blood-supply, so that one might split the uterus without there being a loss of any more blood. Moreover, the irritation causes even a very soft uterus to contract to a hard ball. As it will again relax, all danger is not over and the clamps should be left in position a few minutes, to be pulled upon again if necessity arises. If a tamponade is employed, it is rarely necessary to leave it in position more than an hour if it soaked with some irritating substance, such as carbolic acid (five per cent.). The advantage of rubbing and kneading the fundus uteri should not be forgotten. In milder cases this is all that is required to produce contraction and so stop the hemorrhage.

Widal's Reaction in Yellow Fever.—Lerch (*Journal of the American Medical Association*, February 26, 1898) says that the blood of a patient who was suffering from yellow fever when tested by Widal's method with the bacillus icteroides of Sanarelli, gave the following results: In a dilution of one to ten arrest of motion of the bacilli and agglutination were complete within a few minutes, and in a dilution of one to forty, the agglutination and arrest of motion of the bacilli took place within twenty minutes.

The prompt agglutination of the bacilli and their arrest of motion in the hanging-drop culture, contaminated with the blood of the patient, may prove of the highest value in the future, and allow an early recognition of the disease while yet there is time to prevent its spread.

Palpation and Auscultatory Percussion.—Maguire (*Medical Press and Circular*, February 23, 1898) asserts that palpation of the chest is for most purposes more delicate than percussion, and after a little practice, it is freer from fallacies. In the beginning it is recommended that one press alternately with the first and second fingers of the right hand, but after a little practice it will be enough to pass the hand slowly over the chest wall pressing lightly, as is done in examining the eyeball in a case of suspected glaucoma. Differences of resistance will be observed not only when pressing upon the soft parts, but almost as plainly when pressing over the ribs or sternum. Palpation practised in this way will define more accurately than percussion the exact areas of the heart, liver, and

spleen. Spots of thickening, probably due to a previous pneumonia or pleurisy, have often been made out by the writer, who strongly recommends this method, which he has tested in every possible way, including experiments upon the dead body.

Auscultatory percussion is a valuable method of physical examination, but too much has sometimes been claimed for it. If the stethoscope be placed over some organ in contact with the chest, and a finger used to make light taps in the vicinity, the exact size of the portion of the organ in contact with the chest can be accurately determined, not, as has sometimes been claimed, the size of the whole organ. The limits of a dilated stomach or intestine may be made out, or the fissures between the lobes of the lungs, a point often of importance in phthisis, as the spread of the tuberculous process to the middle lobe is a serious matter and always indicates a late stage of the disease. The retraction of the apex of one lung and the level of the fluid in pleurisy are easily made out by means of auscultatory percussion, while they can only be determined by the acute and practised ear, by simple percussion. Hence, this method of examination, which was advocated long ago by Laennec, should not be allowed to fall into disuse.

THERAPEUTIC NOTES.

Hydrocyanic Acid as an Antidote to Chloroform.—HOBDAY (*Lancet*, January 1, 1898), having observed the different effects of hydrocyanic acid and chloroform when used to produce death in animals, conceived the idea that the former drug might be used as an antidote to the latter in case of an overdose. So successful has it proved in experiments upon animals, that in the Royal Veterinary College in London, when operations upon animals are performed, there are kept on hand no other stimulants than ammonia and Scheele's acid. If the animal goes into collapse the tongue is drawn well forward, and a full medicinal dose of the acid is placed well back upon it. Artificial respiration is performed with the animal in the horizontal position on the side, and when respiration commences the ammonia is held under the nostrils. The stimulating effect of the acid upon respiration is almost instantaneous, and continues about twenty minutes. The dose required for a dog or cat is about 1 minim for each eight pounds of body weight. If an overdose is given the fumes of chloroform will readily control the spasms until the effect passes off.

Scientific Treatment of Chronic Gonorrhea.—VALENTINE (*Clin. Recorder*, January, 1898) has published an article upon "Chronic Gonorrhea," of which the following is a summary:

1. There are no incurable cases of chronic urethritis.
2. All drugs suggested for the treatment of chronic gonorrhea are soon relegated to merited oblivion.
3. The only efficacious method of treating chronic gonorrhea is by dilations, as proposed by Oberlander, followed by irrigations, without a catheter, of the urethra or bladder or both.
4. Urethral fever or other disturbance does not supervene after urethral instrumentation followed by irrigation.
5. Carefully conducted dilations and irrigations are not painful.
6. Gradual, careful pressure by dilators is preferable to the use of sounds in the majority of cases.
7. The effect of dilations is to stimulate absorption of the infiltrations.
8. Functional disturbance and nervous symptoms are improved very early in the treatment.
9. Chronic urethritis can be exceptionally diagnosed and successfully treated, but never pronounced cured without the aid of the urethroscope.

Antipyrin and Quinin in Influenza.—LANDOUZY (*La Presse Med.*, January 29, 1898), has this to say of the treatment of influenza: "The pressing indication to be met in asthenic patients lies in the state of their forces which need sustenance. Stimulating remedies should occupy the first place. Thus, alcoholic liquors, diffusible stimulants, and tonics should be made the basis of medication. For a number of reasons antipyrin ought not to dethrone the salts of quinin in the treatment of influenza, but should march behind them or at their side to render assistance when needed. The salts of quinin, selected and administered with judgment, will not only control many of the pains of the disease, but will relieve the weakness and stimulate the patient. Without exaggeration one may almost say that quinin meets every symptom of influenza, being at once stimulating, tonic, and antiinfectious. The rule should be to make quinin the medicin of choice, antipyrin the medicine of necessity."

Treatment of Syphilis in the British Army by Injections of Mercury.—LAMBKIN (*British Medical Journal*, February 19, 1898), thus describes the advantages of the treatment of syphilis in the British army by injections of mercury: (1) The surgeon carries out the treatment himself, so that there is no chance that the negligence of the patient will interfere with its faithful application. (2) Diarrhea and indigestion are never produced. (3) It is of advantage to the State, in that the number of day's residence in hosipital is greatly reduced.

The results obtained by the writer in his six-years' experience were satisfactory. The healing of the primary lesion was always rapid. The patient was kept in the hospital only until the worst primary and secondary manifestations were past, and then he returned once a week for his injection. The preparation used was a mixture of equal parts of metallic mercury, pure lanolin and two-percent. carbolized oil. The maximum dose injected was 10 drops. Not a single abscess resulted in over 6000 injections. The injections were made into the muscles, and caused no pain worth mentioning, and never rendered necessary any interruption in the soldier's service. The buttock was invariably selected as the site of injection.

The weight of the patient, especially in tropical countries, is an absolute guide to the continuance of treatment. So long as it increases or remains stationary, the injection should be continued; if weight is being lost, the injections should be omitted for a time.

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SATURDAY, APRIL 30, 1898.

A GREAT STEP TOWARD QUARANTINE UNIFORMITY.

THE Health and Quarantine officials of the South Atlantic and Gulf States held a convention in Atlanta, April 12, 1898, Texas and North Carolina alone not being represented by delegates. Dr. H. B. Horlbeck of Charleston, S. C., presided. Although especially called to formulate a uniform system of inland quarantine procedure, the convention endorsed by the following resolutions, two important measures of international quarantine:

"Resolved, That this convention approves the plan of having medical inspectors attached to those consulates where yellow fever and cholera are epidemic, with a view of securing for our protection definite information as to the exact sanitary condition and the presence or absence of contagious diseases in such consular district. And that Congress be urged to make the necessary appropriations to carry the plan into effect.

"Resolved, That this convention is of the opinion that it is a duty devolving on all nations to take measures to eradicate any plague-centers from their territory, and that the existence of such plague-centers is a menace to all other nations, and that our State Department be requested to take measures though proper diplomatic channels for the conveyance of this opinion to the governments deemed obnoxious to the opinion as herein expressed."

The convention was harmonious thoughout, and unanimously formulated regulations which, if applied, will render epidemics of yellow fever wellnigh impossible.

These regulations provide for the timely establishment of disinfection and detention stations, or camps, on the lines of travel by rail or boat, to be erected and operated by the Marine Hospital Service. Twelve sections are devoted to the subject of handling freight and merchandize.

The resolution suggesting that manufacturers or shippers employ and pay a sanitary inspector appointed by the Marine Hospital Service may not meet with ready acceptance, but such action would redound to the profit of a business house, because of the confidence inspired by inspected and practically guaranteed goods. The regulations formulated for isolating and stamping out the disease, and those for preventing its spread by railroads, steamboats, or other means, seem possible and likely to prove efficacious. Particular care seems to have been exercised in obtaining the minimum degree of interference with traffic compatible with the maximum degree of protection. Uniform restrictions, though rigid, will be found much more tolerable than the erratic, despotic exactions of local quarantine officers, such as have characterized past epidemics. The methods of disinfection endorsed are simple and efficacious.

The following are considered efficient germicidal solutions:

1. Bichlorid of mercury, acid, 1-1000.
2. Carbolic acid, pure, five-per-cent. solution.
3. Trikresol, two-per-cent. solution.
4. Solution of formaldehyd, 1-500 (which is two parts of a forty-per-cent. solution of formaldehyd to twenty-five parts of water.
5. Solution of hypochlorid of calcium (chlorid of lime).

Reliance is not placed upon these agents alone but for special purposes sulphur dioxid, formaldehyd gas, steam or boiling are recommended.

The interstate quarantine regulations adopted by this convention are practically those formulated by the Marine Hospital Service, and it was largely due to the presence of Surgeon H. R. Carter of that service that the business of the convention was so scientifically conducted and speedily concluded. A more

intelligent body of men has scarcely ever assembled in the South, and their work is bound to result in untold good to their own section and to the whole country.

THE DUTY OF THE STATE RESPECTING THE AFTER CARE OF VACCINATIONS.

DR. CALCOTT FOX, dermatologist to the Westminster Hospital, London, who has written previously on the best precautions against the occasional untoward results following vaccination, takes up the subject again in the *London Lancet*, as given below. He is also known as a consistent advocate of antiseptic methods in this procedure. His letter in the *Lancet*, for Feb. 12, says that "a distressing case of post-vaccinal erysipelas which has just come under my observation prompts me to ask once more whether it is not desirable and practicable to take some further steps to lessen the chances of similar disasters.

"The State ordains that for the good of the individual and the community a certain inoculation should be practised. The operator satisfies himself that the inoculation is successful, but after that the State takes no further interest in the matter and the wounds are left to heal as best they may, subject to the chances of various contaminations. No doubt these disasters are infrequent, but when they occur they make an indelible impression upon a more or less considerable section of the community. It is useless to explain that the vaccination was not the direct cause but that the erysipelas might just as well have followed a cut or a scratch. It is these preventable accidents which are responsible for very much of the feeling against vaccination, and very naturally so too. Is it not the duty of the State, having carried out the operation, to see that the wounds heal under proper conditions?" Dr. Fox answered his own question very positively by saying that in the case of such operations the authorities are not quit of their responsibilities until each such operation has been conducted to a close. This proceeding undoubtedly does mean considerable additional trouble and care "but it is none the less the duty of the authorities to carry it through."

PATHOLOGIC DEPARTMENT OF COLUMBIA UNIVERSITY, N. Y.

IN the *Bulletin* of the University, for March, Professor Prudden has an entertaining lecture on the growth of pathologic teaching in the medical department of the College of Physicians and Surgeons. The number of teachers and assistants therein at the present time amounts to nineteen. It is the aim to provide at least one instructor for each fifteen to twenty students who take the practical course. Five special attendants care for the microscopes and other apparatus, for the cleanliness of the laboratories, and for the messenger service. Besides the undergraduate instruction in classes, the department affords each year facilities for the pursuit of special advanced lines of study in bacteriology and pathology, and in general microscopy to physicians, to candidates for the higher university degrees and to those preparing for expert careers in various lines. The number of such graduate workers has of late been about twenty each year. As to original work, Dr. Prudden states with gratification that his staff has not been idle; on the contrary, it has found opportunity to keep the fires at least alight upon the altars of research. Altogether, over one hundred and fifty original papers, embodying the results of special studies, have been published by those connected with the department since the founding of the laboratory of the Alumni Association. Reprints of these publications have of late been gathered into volumes for serial issue, the expense of publication having been borne by the Association of the Alumni. The scope of the work in pathology for the future is boundless, and the prospects of beneficent success is most alluring. The greatest danger in a department like this, in which the teaching functions are urgent and dominant, is that the research work may be swamped in academic routine. But it is confidently believed that the maintenance of high standards will be secured in the future, as it has been in the past, by the loyalty to science and the devotion to the department of the men who, year by year, make up its working force.

ECHOES AND NEWS.

New President of the General Medical Council.—At a recent meeting of the General Medical Council Sir William Turner was unanimously elected to its presidency, made vacant by the death of Sir Richard Quain.

International Association of Railway Surgeons.—The next meeting of this Association will be held in Toronto on July 6, 7, and 8, 1898. It is expected that between five and six hundred of the members will be present.

Tax on Proprietary Medicines.—In the war tax about to be imposed, it is proposed to place a tax of two cents on packages or bottles of patent medicine retailing at twenty-five cents or under, and four cents on those retailing at a higher price.

A State Medical Law Upheld. — The United States Supreme Court at Washington recently affirmed the constitutionality of the act of the New York Legislature of 1895 prohibiting persons who have been convicted of, and punished for a crime, from practising medicine in the State, the opinion being delivered by Justice Brewer.

Obituary.—Dr. Erasmus Garrett, during a quarter of a century Chief Medical Inspector of Chicago's Health Department and an eminent authority on smallpox, died of heart failure on the 19th inst. at his residence in Chicago. Dr. Garrett was born in Frederick County, Maryland, February 14, 1836, and was graduated from the University of Maryland.

Epileptic Colony for New Jersey. — A bill is before the New Jersey Legislature for the establishment of an epileptic colony. The commission of inquiry which recommended the bill stated that there are at the lowest estimate two thousand epileptics in insane asylums and almshouses throughout the State, neither of which are fit abodes for them.

The City Physician: Is He the Football of Fortune?—Dr. Johnson, in his "Life of Akenside," says very truly: "A physician in a great city seems to be the mere plaything of fortune; his degree of reputation is for the most part totally casual; they that employ him know not his excellence; they that reject him, not his deficiency. By any acute observer who had looked on the transactions of the medical world for half a century a very curious book might be written on the 'Fortune of Physicians.'"

Dr. Tarnier's Munificent Bequest. — Professor Tarnier has bequeathed to the Paris Academy of Medicine a yearly income of 5000 francs, 3000 of which are set aside for a prize to be given annually and to be called the Prix Tarnier. It will be awarded for the best work on a subject in obstetrics or gynecology. The prize will be given in one sum and will be allotted in the first year for obstetrics and in the second year for gynecology. The Academy can make what use it pleases of the remaining 2000 francs.

New Electric Discovery.—Rychnowski, the electrician of Lemberg, claims to have discovered an electric fluid which he calls "electroid." The discovery has caused a great sensation in Europe. The effects of the fluid are said to be startling, producing light and causing Geissler tubes to omit fluorescent rays. It works photochemically, rotates objects in midair, produces whirlpools in water, and kills bacteria. Metal and glass thereby can be charged with electricity, and the magnetic needle changes direction under its influence.

Plague in Bombay.—According to recent news from Bombay the plague is rapidly declining in that city. The death-rate from the disease is now less than a thousand per week, and that for each succeeding week is a little lower than for the one which preceded it. Dr. Galeotti, of the University of Florence, has arrived at Bombay with the curative serum produced by Professor Lustig and himself. Patients at the Arthur Road Hospital have been placed at his disposal, and some few have undergone the treatment and have recovered.

Homeopathy in the University of Munich. — At a recent meeting of the Financial Committee of the Bavarian Parliament, says the *British Medical Journal*, Herr Landmann proposed that a University Chair of Homeopathy be established in the University of Munich. The Minister replied that the university, to which the question had been referred, had replied that the need of such a chair was not felt, inasmuch as homeopathy was not a science. A similar incident, which ended in like manner, occurred not long ago in the Würtemberg Landtag.

A Fire Extinguishing Powder. — A public exhibition has been made in Brooklyn of the powers of a powder called 'kilfyre," to put out fires. A pine structure, with a sixteen-foot flue, was put up in one of the small parks; it was then well covered with kerosene and tar and set on fire. The exhibitor allowed the flames to gain good headway before he applied the powder. Four seconds after the latter was scattered over the pyre the roaring mass was a blackened ruin, every spark having been put out. It is claimed that this powder is especially adaptable for use in public meeting-places, as schools, churches, theaters, etc.

The Peabody Buildings of London.—A London newspaper says of the huge blocks of Peabody buildings, scattered in various parts of that city, that they are not to be considered among the pleasant sights of the streets; we can hardly associate with them the idea of a cosy home. Nevertheless, plain and indisputable figures show that they are healthier places than the average London home, and that is a high though not a final test of fitness. While the population in them is thirteen times denser than in London generally, the death-rate of infants is nearly twenty-two per thousand below the London average; the total death-rate is nearly three per thousand below the London average. The scheme is a paying one, as is also Lord Rowton's, which is working admirably. Would that no Londoner were worse housed than those in the Peabody buildings.

Photochromography for Pathologic Illustrations.—At a recent meeting of the Midland Medical Society in London Mr. Christopher Martin described the process of photochromography or trichromatic printing for the production of colored illustrations of pathologic specimens, etc., and showed a number of photochromographs made by himself. The process is as follows: Three photographs of the object are taken, on specially prepared films, through red, green, and violet glass screens. From the positives three process blocks are then prepared. The block made from the photograph taken through the red screen is used to print the blue tints, that through the green screen the red tints, and that through the violet screen the yellow

tints. The yellow picture is printed first; in twenty-four hours the red picture is printed over it, and after another interval the blue. By the combination of the three-color pictures a perfect reproduction of all the tints and shades of the object photographed is obtained.

Decrease in the Death-rate from Diphtheria in Germany.—The Imperial Office of Statistics recently published the returns of the causes of death in the towns of Germany of more than 15,000 inhabitants from the year 1885 to the year 1895. These returns show that from 1885 to 1894 there were 119,038 deaths from diphtheria or croup, the average number thus being 11,904 per annum. The maximum was reached in 1893, there being in that year 15,860 deaths, and the minimum in 1888, with 9934 deaths. In 1895, when diphtheria antitoxin was first used on a considerable scale, the number of deaths went down to 7266. The diphtheria death-rate was 10.69 per 10,000 of the population in the preceding ten years, and only 5.4 in 1895, so that the mortality had fallen 49.48 per cent. Of 100 deaths 4.53 were caused by diphtheria from 1885 to 1894, and only 2.53 in 1895. The decrease of the death-rate from diphtheria was almost uniform in every district of the empire; the prevalence of the disease was, however, about the same as it had been for the last twenty years, and it is therefore unquestionable that the serum treatment has had the effect of producing a remarkable improvement.—*Lancet*, February 19th.

A French Nurse Honored.—All Americans who have been privileged to visit Charcot's clinic at the Salpêtriére will remember his favorite head-nurse, Mlle. Marguerite Bottard; and they will not be surprised to learn that she has been decorated with the Cross of the Legion of Honor. It seems that this noble lady has been upward of fifty-six years in continuous service at the institution mentioned. It was in January in 1841 that Mlle. Bottard, who was then just nineteen years of age, commenced life there as a ward-nurse, and ever since, almost without a break, her time has been devoted to the care of the sick. An insatiable worker, she seldom quitted the premises, and it is reported that during a period of three years she never once crossed the threshold of the hospital. At first for some fifteen or sixteen years Mlle. Bottard carried on her duties under the successive direction of the elder Trélat, De Falret, and Legrand du Saulle. Then she was promoted to superintendent of the section for nervous affections under Charcot, with whom she remained until the end. He had the highest possible opinion of his faithful assistant, and often said that she richly deserved this very distinction which now has been awarded to her.

Responsibility of Hospitals for Injury to Patients. — A clear statement of the law relating to the liability of a charitable hospital corporation for the negligence of its servants, resulting in injury to a patient, is to be found in the opinion handed down a few days ago by Judge Cohen of the New York City Court, denying a motion for a new trial in the case of Ward *versus* the St. Vincent Hospital. The plaintiff was a pay-patient at the hospital. She was severely burned by an uncovered water-bag which a nurse had carelessly left in her bed. The evidence indicated that the hospital authorities had exercised due care in the selection of this nurse, and that she had been particularly instructed by the superintendent of nurses in regard to the proper use of water-bags. Indeed, there was no proof which would have justified the jury in finding that in selecting and employing the nurse the institution was in any respect negligent. Having fulfilled its duty in this regard, Judge Cohen holds, in accordance with the great weight of authority in this country, that the hospital is not liable for the subsequent carelessness of the nurse, unless notice of her unfitness had been brought to the attention of the corporation. The fact that the institution receives pay from some patients does not affect the application of the rule, inasmuch as St. Vincent's Hospital is a public charitable corporation, and is very far from being supported by the money received from patients.

Bogus American Doctors Abroad.—The following is from the *Medical Times and Hospital Gazette* (London): "Among the army of unqualified practitioners now operating in the metropolis of the British empire, the most audacious as well as the most successful financially, are the Yankee quacks. They fill the columns of our newspapers with the most wonderful stories of their cures of the blind, deaf, and halt, and they attract thousands of dupes who pay these pretenders large sums of money for their services, far beyond what they would think of paying hospital specialists for similar services. It is curious that these men never get into trouble for malpractice, notwithstanding that they often use risky operative methods of treatment, especially as they are unqualified and untrained when they arrive in England. We have learned recently that these men on arriving lose no time in visiting the wards of our special hospitals and attending the clinics of the leading physicians and surgeons. The presentation of a neatly printed card, describing the owner as Philadelphus Chicago, M.D., U. S. A., ensures the free run of the hospital wards and out-patient departments week after week, until they have picked up all that can be taught. Sometimes they attend post-graduate courses in special subjects, and in this way, although the most arrant knaves, they acquire a certain amount of skill which enables them to carry on their quackery with the minimum of risk. Unless properly introduced, hospital tramps hailing from the United States and calling themselves M.D.'s should be rigidly excluded from seeing hospital practice except as patients."

CORRESPONDENCE.

THE ARMY SURGEON'S EQUIPMENT.

To the Editor of the MEDICAL NEWS.

DEAR SIR: During the first year and a half of the War of the Rebellion each regiment was provided with a cumbersome wagon to carry its medical and surgical supplies. This "medicine wagon" when loaded weighed over 3000 pounds, and required four mules to draw it. The quantities of the materials carried were not well ap-

portioned, being in the case of many articles excessive, and in a few instances insufficient. After Jonathan Letterman became medical director of the Army of the Potomac in 1862, the amount of material to be carried was largely reduced by judicious selection, a lighter wagon was introduced, and one wagon was allotted to each brigade instead of to each regiment as previously. This system continued in use to the close of the war. Since that time medical supplies have been reduced in bulk in various ways, and the regular army is now supplied with medical chests and surgical chests, each weighing about ninety-five pounds, and containing a complete equipment for a regiment. The medical chest contains an ample variety of medicines, from acetanilid to sulphate of zinc, all in tablet form except alcohol, ammonia water, chloroform, oil of turpentine, whisky, and brandy. There are also numerous miscellaneous articles, such as hypodermic syringes, rubber, self-injecting syringes, reagent case, stethoscope, mustard plaster, beef extract, candles, etc. The surgical chest contains antiseptic tablets, ether, chloroform, glycerin, tincture of opium, and whisky, various instruments, trays, and a supply of dressings.

Each private of the hospital corps when in the field carries a pouch containing aromatic spirits of ammonia, rubber bandages, first-aid packets, wire gauze for splints, surgical plaster, scissors, and dressing forceps.

Yours sincerely,

JAMES P. KIMBALL,
Surgeon United States Army.

GOVERNOR'S ISLAND, N. Y., April 23, 1898.

A PROTEST AGAINST QUACKERY.

To the Editor of the MEDICAL NEWS.

DEAR SIR: Much has been said and written of late on the subject of more thorough medical education. The writer will readily admit that it is possible to improve our methods of instruction. Not in more or longer terms at college, or in a greater amount of laboratory training, but in practical hospital work. It is very probable that the young sawbones entering upon his career has never dressed a fracture, reduced a dislocation, performed an an amputation, or even been called upon to diagnose and treat a case of measles. He has a diploma or license and if the people will give him an opportunity he is ready to begin his medical education. He has seen many brilliant surgical operations, and knows to what operator and to what hospital to send any particular surgical case. There are two parties to the practice of medicine, the profession and the people. The profession has its faults, but the imperfections of the laity do not seem to be so distinctly recognized. The town in which the writer lives is situated in a fertile spot in central Indiana. It has a population of about 8000 inhabitants, four railroads, numerous churches, and excellent schools. Travelers from the effete East say that it is a good town. It is nine years since the writer cast his lot in this community, and in that time he has learned many things he never heard of at medical schools. He has learned that a dry-goods clerk can go to a house where the wife is suffering from erysipelas, walk around the house burning something on a shingle and muttering some incantation in German, and that both the doctors and the disease will be put to flight. He knows a saintly old man in the country, who, by placing his hand on a person afflicted with erysipelas and repeating a certain verse from the Bible, restores the sufferer to health. He tells me that he has cured many cases of "St. Anthony's Fire." Recently Senator Foraker's pet, osteopathy, has been received into public favor. Last week the "Herbs of Life Co." filled the spacious Opera-House nightly, dispensing low comedy and "medicine." The latest, and to the writer the most flagrant instance of quackery which has come to his notice, are the exploits of a magnetic doctor from an Ohio city. He makes use of neither medicine nor instruments, and is not amenable to the law. He is dirty, ignorant, profane, obscene, and intemperate. His patronage is the best, and this is "no mean city." He charges good fees and collects them. It is said he has had 200 patients here. That is a matter of conjecture, but the writer knows that he has had a great many very excellent people as patients, ministers, lawyers, business men, their wives and children, and one man who in early life studied and practised medicine but afterward became a prosperous business man. It is needless to specify the many instances of credulity among people whom one would confidently expect to be more enlightened. It is an endless procession of disgusting deceit.

Before the writer attended medical school he was a student at two of the leading colleges in this interior valley. He found his class at medical college composed of men, who, in manly character, morals, and intellect were the equals if not the superiors of the students enrolled in the scientific and literary schools. His observation since is that with few exceptions the class of young men who enter upon the study of medicine is as intelligent as that engaged in the study of any other profession. The writer also thinks he knows, from a professional standpoint, something of the character of the people to whom these young men after graduation appeal for sympathy and support. It is casting "pearls before swine." The medical profession has its defects, but has more than discharged its obligations to the public. The leaven of reform should be spread among the people. If that does not bring about a change for the better it might improve conditions for each medical school to add to its curriculum a department of humbug, fraud, and deceit.

A CONSTANT READER.

April 7, 1898.

OUR BERLIN LETTER.

[From our Special Correspondent.]

SPECIAL HOSPITALS FOR POOR BUT NOT PAUPER PATIENTS WITH NERVOUS DISEASES — SPORADIC SCURVY AND BLOOD PATHOLOGY — AN EPIDEMIC OF TYPHUS IN THE BUKOWINA TRAMPS, AND THE SPREAD OF TYPHUS AND EPIDEMIC CEREBRO-SPINAL MENINGITIS—TWO RECENT GERMAN CONTRIBUTIONS TO APPENDICITIS.

BERLIN, April 21, 1898.

ALL the arrangements are completed for the establishment of a special hospital in the neighborhood of Berlin, in

which patients suffering from nervous affections, and unable to afford the expense of treatment in private hospitals, will receive attention. It is in accordance with the idea sketched by Möbius of Leipzig some time ago that the new hospital is to be directed. There are to be some features which are very special to it and rather exceptional in Germany: For instance, the use of alcoholic liquors is to be forbidden, and special provision is to be made to furnish the patients the opportunity to do gardening and outdoor work of various kinds, as well as light work at various trades. This method of treatment in specially arranged hospitals and institutions, favorably located, represents the most popular thing in therapeutics in Germany at the present time. I have mentioned the similar institutions for tuberculous patients before. They are springing up all over Germany now. Philanthropy is to a great extent taking the form of endowment and foundation for such institutions. Most of them are not intended for the very poor—the paupers—who it is considered will be cared for, for the present at least, in public hospitals as they exist, but for that lower middle class who, though unable to pay much, are yet willing and ready to pay something, who are too sensitive to mingle with the paupers, and yet, who are eminently deserving of aid. The object of the charity is a most deserving one, and the manner in which it is offered most delicate, so that it may be expected that a great deal of suffering will be relieved.

As to the value of the therapeutic principle involved in the treatment of a certain class of patients, uniformity of life, diet, and habits being easily secured when all can be subjected to practically the same régime, this must wait further trial before it can be definitely accepted. Within the next few years it is to receive a most thorough trial here, and the Germans are assured that it will not be found wanting in its practical results. The outcome will surely be watched with a good deal of interest.

A very interesting case of sporadic scurvy (scorbutus) has recently been reported here. It is one of those isolated cases which sometimes occurs even in people in reasonably comfortable circumstances, when no possible reason can be ascertained for the serious nutritional disturbance that develops. This patient had never been on a sea voyage, and had no capricious likes or dislikes for certain articles of diet, which might lead to the conclusion that some important nutritional element was lacking in his food. The first symptom noticed was blood-stained semen. Sometime after this an intense tired feeling and absence of all desire for exertion developed. Not until eight months after the first symptom was noticed did the spongy, bleeding gums, and the subcutaneous hemorrhages lead to the diagnosis of scorbutus. Despite every effort of therapy the nutritional condition grew steadily worse, and a fatal termination ensued. This is the first time that a blood dyscrasia, of which, however, absolutely nothing could be seen by microscopic examination of the blood, has been known to cause bloody seminal discharges, and there is a suspicion that the symptom may occur oftener than is thought; but that its presence is not suspected, as usually opportunities for observation of it are extremely limited.

Meantime the blood dyscrasia itself is thought to represent one of those obscure pathologic modifications of the blood plasma, the study of which is the only hope of blood pathology at present; for, after all the work that has been done on the morphology of the blood, there is coming the realization that in this alone there is very little of promise for the future. One of the most distinguished blood pathologists in Europe, Ehrlich, here at Berlin, has practically given up the study of blood pathology as there seems to be so little to be gained from it. If the further study of blood plasma will illustrate these sporadic cases of scurvy, of which a number of cases have been reported, one of the modern medical mysteries will be solved.

An epidemic of typhus (spotted typhus, as they call it here, or hunger fever) is reported to be raging in the Bukowina, a province of the Austrian Empire bordering Hungary, Turkey, and Russia. The province is an extremely poor one, and the people live with the worst hygienic surroundings, so that the typical conditions prevail for the development of the disease. Typhus is so common in some of the outlying districts of Hungary that the affection is known in certain parts of Europe as the Hungarian disease. Special medical interest has been aroused in the epidemic, which is not a severe one, by the hope that improved bacteriologic methods may lead to the discovery of the etiology of the disease.

The health authorities of neighboring provinces are bestirring themselves to see that the disease does not spread beyond the district at present affected. Special care is being taken that tramps in their wanderings do not carry the disease with them; for it is becoming very clear that these homeless wanderers, who sleep any place where they may lay their heads, who are not finicky about their surroundings and food, who use cast-off wearing-apparel without a word as to what may have happened to its former owner, who huddle together in the winter and so spread any germs with which they or their clothing may be infected, are responsible for the dissemination of more disease than has heretofore been imagined. Of typhus, this seems particularly true, so that special regulation of tramps is to be instituted in the affected districts.

Though typhus is considered to be essentially an epidemic disease, every year there are occasional cases of it that turn up in the hospitals of Berlin. So that the disease is considered to have acquired a certain endemicity here, through the prompt intervention of the health authorities, and the immediate and thorough segregation of the cases, prevent anything like an epidemic.

Of interest in the matter of tramps and the dissemination of disease, is the fact that during a recent small epidemic of cerebrospinal meningitis epidemica, the diagnosis being made by the finding of the meningococcus intracellularis, the first case occurred in a tramp, a member of a very respectable family whose shiftless ways and love of wandering had brought him to this mode of life.

Two interesting articles on appendicitis from the pens of German surgeons, who treat the question much more from the American standpoint than is customary over here,

have recently appeared. Professor Sonnenberg's article in *Communications from the Borderland of Surgery and Medicine* (the last number) contains an interesting discussion of certain points in the etiology and pathology of the disease. It forms an additional chapter to his book on the subject which appeared at the end of the year.

Professor Kümmel's article in the *Berliner Klinische Wochenschrift*, April 11th, is of more practical import. Kümmell's statistics of the mortality from appendicitis, according to the period of the disease at which treatment is begun, are interesting. In 15 cases in which treatment was begun on the first day, there were no deaths; of 44 on the second day, there were two deaths; 76 on the third and fourth days, with 4 deaths; 4 on the fifth day, with 2 deaths; 102 between the sixth and tenth days, with 9 deaths; 54 between the eleventh and fifteen days, with 4 deaths. Treatment does not necessarily mean radical surgical intervention, but coming under medical care in such a way that the course of the disease may be carefully observed, and unhampered judgment as to the best method to be followed in the case can then be made.

TRANSACTIONS OF FOREIGN SOCIETIES.

London.

CHRONIC GASTRIC ULCER AND ACUTE PERFORATING ULCER—AGE CHANGES IN PLACENTA AND MEMBRANES—PERFORATING WOUNDS OF THE KNEE-JOINT—AMMONIUM-CHLORID TEST FOR URIC ACID—NATURE OF KALA-AZAR—ASEPTIC OPHTHALMIC SURGERY—GASTRIC DILATION.

AT a meeting of the Medical Society, March 14th, TAYLOR read a paper on "Gastric Ulcer." He said he believed that chronic and perforating ulcer and acute ulcer are two different and distinct diseases. The former attacks males in seventy-two per cent. of the cases, and usually subjects between forty-five and sixty years or age. It occurs in those persons who live busy, energetic lives. It is irregular in outline, situated near the pylorus, and the proliferation of tissue which it produces usually prevents perforation before there has been formed an adhesion to some solid viscus. There is little doubt that such ulcers are chronic from the first. The patients are extremely prone to errors in diet. A clean punched-out ulcer is very rare in males, and in females it occurs almost exclusively, between the ages of sixteen and thirty years. The frequent association of chlorosis and ulcer is more than accidental, for in almost every acute ulcer there is a previous history of chlorosis. These ulcers have no proliferative zone, as do the chronic ones in men. He suggested that the lesion is of the nature of a neurotic dystrophy. Other theories which have been advanced are: (1) mechanical, which has not clinical evidence to support it; (2) vascular, which does not explain the occurrence of a single ulcer instead of many; (3) glandular, which does not explain the fact that these ulcers occur in women alone. In favor of the local neurosis theory is to be mentioned the fact that these ulcers occur in young women; that in appearance they resemble perforating ulcers of the foot, and that they are undoubtedly associated with chlorosis.

WILLIAMS said that the association between chlorosis and ulcer is not a very close one, since ulcer occurs in only a small proportion of chlorotic patients. In the treatment of these patients he prefers to feed by rectum, though that sometimes occasions biliousness, due apparently to the lack of the normal stimulus to the flow of bile which the presence of food affords.

BOWLES said that many of the patients are hard-worked servants, who did not get sufficient rest. Rest of mind and body and good hygienic surroundings are the essentials of treatment. He had observed good results from the use of bismuth and hydrocyanic acid, with or without small doses of opium.

At the Pathological Society, March 15th, EDEN read a paper on "Age Changes in the Placenta and Membranes." The life of the placenta is a short one. It grows rapidly, and as rapidly grows old, and is then shed like a withered leaf. The ripe placenta is a worn-out organ, and shows changes of senile degeneration which must be distinguished from real pathologic changes. It is because these alterations have often been mistaken for pathologic ones, and also because the placentas of macerated fetuses have been used for purposes of study that there is so much confusion about this subject. The following senile changes can be detected in the placenta at term: (1) Endarteritis obliterans affecting considerable tracts of the middle-sized umbilical arteries; (2) degenerative changes in the chorionic epithelium and in the decidual cells of the serotina; (3) the formation of "white infarcts"; (4) thrombosis of a certain number of the subplacental sinuses and serotinal vessels. The presence of these changes in placental tissue suffices to indicate that it belongs to the end of the gestation period.

At the Clinical Society, March 11th, WALLIS detailed three cases in which the knee-joint had been perforated. In one, seen twenty-four hours after the injury, the joint contained only blood. In two others, seen two and fourteen days respectively after the accident, there was already suppuration in the joint-cavity. In all of the cases the joints were washed out with a dilute solution of bichlorid of mercury and then sewed up. In the first, healing occurred without trouble; the continued suppuration in the other two required further incision and drainage, and in the last case excision of the knee was finally required. Though in the two cases of suppuration mentioned it had been necessary to reopen the joints for drainage, the speaker thought it better to attempt a cure without drainage, as this treatment is sometimes followed by success.

BARKER agreed with Wallis that drainage of the knee-joint is often overdone, though in septic cases it is sometimes unavoidable. He objected to the use of irritating antiseptics for irrigation. Those germs which are too deeply seated to be mechanically flushed out, can only be killed by antiseptics which are too strong for use in irrigation. He, therefore, flushed the suppurating joint with hot water. The success which has followed the extension of surgical procedures to the knee-joint in recent years has been due in no small measure to the practice of closing the joint without drainage.

HAIG gave the Royal Medical and Chirurgical Society, March 22d, a demonstration of some results which may

be obtained by the use of the ammonium-chlorid process in the microscopic detection of uric acid in the blood. A minute drop of blood is mixed with a similar drop of a ten-per-cent. solution of carbonate of sodium, and then with a drop of a twenty-per-cent. solution of chlorid of ammonium, and finally placed on a cover-glass. Evaporation is prevented, and it is allowed to stand thirty minutes. If then examined with an ⅛-inch objective, pale spheric granules are seen all over the field. The proportion which these granules bear to the red blood-cells shows roughly the amount of uric acid that is being excreted with the urine.

LUFF said that uric acid cannot be shown to be present in human blood, even in minute quantities, and that the same reaction as that described can be seen in goose blood, which certainly contains no uric acid whatever, and also in a solution of a mixture of cheese and caustic potash.

In reply, Haig said that he did not pretend that this was a test for uric acid, but that the number of crystals, whatever they may be, varies according to the amount of uric acid secreted by the kidneys, as can easily be proved by any one who will take the trouble to carry out the necessary analysis. In a case in which the proportion of these granules to the red blood-corpuscles was 1 :8, it rose upon the administration of the salicylate of soda to 1 :2.

ROGERS gave an account of the investigation of an epidemic of kala-azar, or black fever, which has slowly spread up the Assam Valley during the past fifteen years, carrying off at least one-fifth of the population of some districts. It was at first thought to be malaria, but in 1889, after a special investigation, it was reported to be ankylostomiasis. Since then, however, it has been proved that the specific worms are as frequent in non-affected as in affected natives, and more recent and thorough examinations of those attacked have shown the disease to be a severe form of malaria, of an irregularly remittent type, resistent to the action of quinin, and producing progressive anemia, diarrhea, and often dropsy, with enlargement of the liver and spleen. The epidemic seems to have originated in an intensification of the ordinary malarial fever in a very malarious district during an extraordinary succession of unhealthy years, due to deficient rainfall.

At the meeting of the Ophthalmological Society, March 10th, MCGILLIVRAY read a paper on the "Aseptic Treatment of Wounds in Ophthalmic Surgery." Antiseptic solutions, however weak, have an irritating effect upon cut surfaces, and hence their use in eye surgery has been very largely superseded by normal salt solution, for the antiseptic solutions when employed could only have a mechanical power of cleansing a wound; since in a strength suitable for irrigation they require several hours' contact with bacteria to destroy them. A description of the operation for senile cataract was then given as an illustration of the best aseptic technic. No antiseptic is used at any time. The eyelashes are cut short to prevent them from coming in contact with instruments during operation, and to facilitate cleansing the margins of the lids. The face is washed with soap and warm water, especial attention being paid to the folds of the eyelids. The conjunctival cul-de-sac is then flushed with normal salt solution, the lids being everted one after the other, but no mop is used to cleanse them, as it irritates their surfaces and so increases secretion. All instruments, etc., are sterilized by heat. Before and after the operation, while the speculum is in position, the eye is again flushed with sterilized salt-solution. The dressing consists of a layer of moist gauze, covered by a thin layer of absorbent cotton which is held in place by a vertical and horizontal strip of adhesive plaster. The other eye is not covered.

ARMSTRONG read a paper before the Harverian Society, March 17th on "Gastric Dilation, speaking especially of idiopathic dilation. The chief causes of this were said to be: (1) Habitual distension from chronic dyspepsia; (2) the taking of too bulky meals; (3) bolting of food and drinking of much fluid with meals; (4) failure of power in the central nervous system; (5) neurasthenia; (6) worry, anxiety, and overstrain, mental or bodily; (7) debility, atrophy, or fatty degeneration of the muscular coat of the stomach itself, and (8) the after-effects of febrile diseases, especially typhoid fever. Among the various methods of making a diagnosis none is more reliable than "splashing." The rules for treatment should be: (1) To distend the stomach as little and as seldom as possible; (2) to promote evacuation of the lagging contents of that organ; (3) to keep down fermentation; (4) to regulate the dietary, and (5 to improve the tone of the general nervous system. Fuming hydrochloric acid, 6 to 12 drops in 6 ounces of water, calomel, arsenic, strychnia, and kola are remedies worth trying. While it is desirable to keep up the general nutrition, the patient should take as few meals as possible, giving the stomach time to empty itself. Bread, farinaceous foods, bulky vegetables, and milk were spoken of as being harmful in cases of dilation; what little bread is taken should be twice baked or cut very thin, and thoroughly torrefied. As little fluid as possible should be taken with meals, such fluid as is required for the purposes of the system being taken one hour before food.

HARE said that no one class of remedies does as much good in gastric dilation as emetics. Vomiting is a much more effective method of evacuating the stomach than the tube, since the violent contraction of the muscles squeezes out a great quantity of mucus from the cells. He has, over and over again, stopped a vomiting of several weeks' duration by a single dose of ipecacuanha, 20 grains being made into an ounce draught.

MORRISON said that dilation of the stomach should be treated on the same principles as that of any other hollow organ, for instance, the heart, by postural and functional rest, limitation of its contents, and the use of tonics to increase the muscular power.

GOODHART disputed the idea that dilation was the result of obstruction. How rarely in cases of obstruction due to pyloric cancer is there any dilation. The real cause of dilation is muscular weakness, and not stricture. He expressed himself as doubtful of the good effects to be derived from posture, but spoke highly of the relief which follows the application of a proper bandage.

SOCIETY PROCEEDINGS.

AMERICAN SURGICAL ASSOCIATION.

Nineteenth Annual Meeting, Held at New Orleans, April 19, 20, and 21, 1898.

FIRST DAY—APRIL 19TH.

MORNING SESSION.

DR. J. HOLT of New Orleans delivered an "Address of Welcome," after which the various committees made their reports. The President of the Association, DR. T. F. PREWITT of St. Louis, Mo., delivered his address upon "The Future of the Association."

After referring fully to the organization of the society and to some of its former presidents, especially to its founder, he dwelt upon the standing in the profession of its present and future members, and especially upon their contributions to the art of surgery. He also referred to the many signs of progress of the Nineteenth Century, among other things mentioning the railroad, steamboat, telegraph, telephone, and electric light, as well as the rapid strides made in surgery, and concluded by urging the hearty cooperation of all distinguished surgical practitioners, writers, and teachers in enabling the Association to occupy the proud position its founders destined for it.

AFTERNOON SESSION.

DR. CHARLES A. POWERS of Denver, Col., read a paper, entitled

THE QUESTION OF OPERATIVE INTERFERENCE IN RECENT SIMPLE FRACTURES OF THE PATELLA.

The author first referred to the writings of Dennis, Bull, Czerny, and Myles upon this important subject, and then commented on the two most important tests for this fracture, the structural and the functional. As to the mechanism, he believed that the majority of these fractures are due to muscular action, in that the patient endeavors to save himself from falling, and thus strongly contracts the quadriceps femoris. He showed, in treating the question of pathology, that there are but two fragments in the fracture due to muscular action. The upper one generally being the larger, the fractured surfaces are, as a rule, irregular, and the line of the break transverse or oblique. The author enumerated the conditions tending to cause imperfect union and the obstacles to union as follows:

1. Separation of the fragments, due to (*a*) retraction of the upper fragment from contraction of the quadriceps femoris and a slight drawing down of the lower fragment through shortening of the ligamentum patellæ, and (*b*) to the presence of effused blood.

2. Tilting of the fragments (this may be present to a marked degree, and unrecognizable without operation).

3. Rupture of the tendinous expansion of the vasti and of the lateral portions of the capsule of the joint.

4. Prolapse of prepatellar tissues into the break.

5. Atropy of the quadriceps femoris due to (*a*) disuse; (*b*) arthritis; (*c*) marked contusion of the muscle; (*d*) blood extravasated from the joint through the rent in the upper part of the capsule.

6. Arthritis of the knee-joint.

7. Adhesion of the patella.

Further, though of little value, may be added:

8. Natural poverty of the blood supplied to the bone (rendered negative by the fact that the vertical fractures healed satisfactorily).

9. Exceptional tendency to osteitis, seen in fat people, in the aged, and in certain conditions of the blood.

In reference to the non-operative management of fractured patillæ, the speaker considered that no better evidence of the unsatisfactory results need be adduced than the large number of devices and plans which have been resorted to from time to time. He then liberally quoted from numerous personal letters from prominent surgeons all over the United States, each giving his opinion and preference as to the treatment of this fracture. The results of various kinds of treatment by many different surgeons, and the comparative mortalities from the various methods were presented in elaborate statistics.

Dr. Powers then took up the subject at great length, under the headings of limitations attending the operation, selection of cases, time of operation, operative procedures, and, lastly, dangers and immediate and remote results of operative management and comparison of these results with those obtained without operation.

DISCUSSION.

DR. J. D. BRYANT of New York, speaking of the comparative value of the different methods of treating fracture of the patella, referred to the work of the late Professor Frank H. Hamilton on this subject, and called attention to the importance of the following determining factors: (1) The degree of physical injury; (2) the duration of confinement in bed, as bearing respectively on the comfort, health, and business demands of the patient; (3) the character and importance of the inherent and acquired complications of respective methods of action, and (4) the final burdens imposed by the sequel of different plans of treatment.

Dr. Bryant said that except in cases emphasized by a special indication he was not inclined to the practice of suture of the patella, but thought it a justifiable procedure in selected cases.

At present the technics of operations which he employs consist (1) in making a short vertical incision; (2) removing the blood-clots from the fractured borders of the bone along with the interposed fibrous tissue that is sometimes present, and cleansing the joint cavity; (3) draining the joint with a few strands of silk-worm gut at the outer side; (4) uniting the fracture with a small wire so placed as to cause retention and proper apposition of the fragments, and (5) closure of the wound, antiseptic dressing, and fixation in bed for two weeks, followed by plaster-of-Paris bandage, when the patient is allowed to be about on crutches.

In closing, he called especial attention to a mechanical method wholly or in part employed by himself during the past twenty years in the treatment of fifteen cases of simple fracture, for which he claimed (1) greater comfort and efficiency; (2) less danger and only a week's con-

finement in bed, and (3) results equal to the best attending the employment of other mechanical methods.

DR. H. M. RICHARDSON of Boston spoke of the importance of good surroundings, good health of the patient, and surgical experience in aseptic technic in the treatment of these fractures. He thought wiring should be seriously considered if, owing to extensive lacerations, complete control of extension cannot be obtained. He also thought that in ordinary cases the time of confinement should be six months. He considered that a wound of the knee-joint is especially liable to infection. When failure of the conservative methods has been demonstrated, wiring of the patella should be considered.

DR. JAMES E. MOORE of Minneapolis thought that the opinion of American surgeons of the present day was represented by Dr. Powers' paper, believing it to be better than the results reported from the use of non-operative methods. He believed that an open arthrotomy would be less fatal than the passage of ligatures around the patella, and strongly advocated asepsis, proper environment, experience in performing operations about the knee-joint, immediate operation, and he believed the approximation of the fragments would thus be made easier. So as to avoid over-distension and interference with circulation, he believed better results would be obtained by temporary drainage. However, he did not feel that the amount of separation is any index as to the future usefulness of the joint.

DR. W. S. HALSTED of Baltimore was in favor of drainage only when the tissues were themselves not able to take care of the infection. He advocated immediate opening of the joint with thorough washing, and also the use of rubber gloves during these operations.

DR. POWERS closed the discussion by stating that he had expressed the opinion in the body of his paper that if a surgeon felt able to perform one of these operations he ought to feel equally safe in dispensing with drainage.

DR. NICHOLAS SENN of Chicago read a paper, entitled

THE ETIOLOGY AND CLASSIFICATION OF CYSTITIS.

After speaking at length of the anatomicophysiologic construction of the bladder, and referring to its lack of absorptive power, he spoke of the etiology, which he considered under the following heads:

1. Predisposing causes: (*a*) Retention of urine; (*b*) abnormal urine; (*c*) tumors; (*d*) unrest of the bladder; (*e*) calculus and foreign bodies; (*f*) exposure to cold; (*g*) venous stasis and trauma.

2. Exciting causes: (*a*) Infection through the urethra; (*b*) infection by the urine; (*c*) infection from adjacent organs; (*d*) infection from the blood, etc.

After mentioning Guyon's classification, he next considered this part of the subject, dividing it into (1) the anatomic, (2) pathologic, (3) clinical, and (4) the bacteriologic. He subdivided the anatomic into paracystitis, pericystitis, interstitial cystitis, cystitis; the pathologic into suppurative cystitis, exudative cystitis, catarrhal cystitis, ulcerative cystitis, exfoliative cystitis; the clinical into chronic cystitis, acute cystitis; and the bacteriologic into streptococcus infection, staphylococcus infection, bacillus coli communis infection, diplobacillus infection, saprophytic infection, gonococcus infection, erysipelatous infection, tuberculous infection.

DISCUSSION.

DR. JOHN PARMENTER of Buffalo, N. Y., in reference to the bladder not possessing any power of absorption, mentioned his experiment of injecting eight drops of sulphuric ether in a dram of water into the bladders of twelve healthy men, and detecting the odor of ether on the breath one minute after the injection. He considered that infection is usually due to a combination of traumatism, with the presence of micro-organisms, and urged greater care in the disinfection of the urethra before the passage of sounds.

DR. W. S. HALSTED of Baltimore, referring to the work of Dr. Young, one of his assistants, mentioned that Dr. Young found the gonococcus occasionally present in neutral urine, sometimes in acid, and once in alkaline urine.

DR. ALEXANDER of New York said that there are lymph-nodules present in the bladder and ureters, and he took exception to Dr. Senn's statement that there are no glands in the mucous membrane of the bladder. He said that sometimes these lymph-nodules give rise to a peculiar inflammation which he termed "nodular cystitis." He thought that cystitis was usually caused by retention of urine, and that in moderate cases of stricture an appreciable amount of residual urine is found, and further, that sexual hyperemia results from a moderate prostatic congestion. In regard to traumatism, he thought it was often due to destructive diseases brought about by irregular catheterization, and said that when a patient with prostatic enlargement is catheterized with an absolutely clean instrument infection will still occasionally occur. He also said that if a patient is catheterized at nine o'clock in the morning, again at five or six in the afternoon, and not again until the next day at noon the resulting over-distension of the bladder will produce trauma, and consequently, the more rapid occurrence of infection.

DR. SENN, in closing the discussion, stated that he believed the smell of ether on the breath in Dr. Parmeter's cases was the result more of a process of diffusion than of absorption and that the vesical mucous membrane does not possess power of absorption, though the urethra and neck of the bladder do.

(To be continued.)

NEW YORK ACADEMY OF MEDICINE.—SECTION ON ORTHOPEDIC SURGERY.

Stated Meeting, Held March 18, 1898.

A. B. JUDSON, M.D., Chairman.

CONGENITAL DISLOCATION OF THE HIP CURED BY LORENZ METHOD OF FORCIBLE REDUCTION.

DR. ROYAL WHITMAN: This little girl, two and a half years of age, had a congenital dislocation of the hip. I operated upon her when she was eighteen months old by the Lorenz method of forcible reduction, and put her in plaster. This she wore six months, and for two months

more she wore an apparatus. She now walks very well for so young a child. I have operated in sixteen cases by this method. The main point is to operate early. In this case the protruding abdomen led to the child being treated for rickets. There was a shortening of three-fourths of an inch in the affected limb, and now I doubt if any of you can tell which it was. I consider this a perfect result.

DISCUSSION.

DR. R. H. SAYRE: This is the first case I have ever seen in which a perfect cure has resulted.

DR. T. HALSTEAD MYERS: Last summer I saw a case in which a perfect cure was obtained. There was one-eighth of an inch of shortening, but the child could run, jump, and do anything that other children could do.

DR. A. M. PHELPS: This seems to be a case of dislocation occurring at birth in a child in whom the acetabulum was normal. I have treated thirty-one patients with congenital dislocation of the hip, and in only one have I found a normal acetabulum. There is a perfect reduction in this case, but it should not be placed before us as a standard; for in most cases there is no acetabulum in which to put the head of the bone. I do not believe that bloodless forcible reduction is a good method; for shortening will follow because there is usually no acetabulum in which the head of the bone can rest. The only way to treat these patients is to make an acetabulum with the chisel. Of course, I am in favor of making an attempt at reduction, especially if the X-ray shows the presence of an acetabulum.

DR. GEORGE R. ELLIOTT: In regard to the non-cutting operation for congenital dislocation of the hip, I wish to emphasize the fact that there is considerable acetabulum in young children when the joint is dislocated, say in children under four years of age, and this is readlly appreciated by the operator at the time of reduction. The head of the femur can be distinctly felt as it is forced over the posterior border of the socket. It is felt to be retained, and can be easily dislocated again. Now, if the limb is fixed at the proper degree of abduction, there is no possibility of its getting out of position, being held by the ligamentous and muscular structures of the joint. If it is not felt to be in something at least partially performing the functions of a socket, I believe the probability of its being retained, and thus leading to more perfect acetabular development, is greater than after the cutting operation in which the ligamentous and muscular structures have been divided. The field for the operation is in young subjects.

DR. WHITMAN: This case is one of a series of sixteen in which I have employed the bloodless method of reduction. I think the head of the bone is capable of making an acetabulum. A rudimentary acetabulum exists in nearly all cases. I know this because when I push the head of the bone in place it stays there. When the dislocation is anterior, which is not usually the case, I twist the bone around.

POTT'S DISEASE.

DR. R. W. TOWNSEND: This little child is three years of age, and was brought to the Hospital for Ruptured and Crippled last week because of a swelling of the neck. The question of the causation of this tumor was investigated, and it was found that the child had Pott's disease of the upper cervical vertebræ. This condition had not been suspected, although the child had been seen by a number of physicians. It is rather unusual to see a Pott's abscess in this location; under these circumstances it is much more apt to be retropharyngeal. She was put on this temporary frame, and as yet nothing much in the way of treatment has been done for her.

DISCUSSION.

DR. PHELPS: When these abscesses occur in the cervical region they should be at once operated upon from without on account of their liability to rupture internally. I have seen cases in which such an abscess appeared and pushed the pharynx forward. If they rupture internally the child will die of pulmonary tuberculosis. Therefore, they should be incised from without.

ENLARGEMENT OF THE TIBIA; OPERATION.

DR. B. FARQUHAR CURTIS: You will remember that Dr. Ketch showed this little girl at one of the meetings last fall. She is twelve years old, and had an anterior bowing of the right tibia and some eversion of the foot. The right tibia was three inches longer than that of the sound leg and greatly thickened, the circumference of the affected leg being one and a half inches greater than that of the other. The child's general health was also poor, probably as a result of pain. A skiagram showed a thickened tibia with some irregularities in the enlargement, and an almost complete disappearance of the epiphyseal line, which was due to pressure. When the child was shown there was some discussion as to the exact nature of the affection. There was no ascertainable history of syphilis, but in order to give the patient the benefit of the doubt, she was given iodid of potassium. She was operated upon on January 6th, after a month of medical treatment and rest in bed. During this time the tenderness disappeared and her general condition improved. The tibia was then exposed and a wedge-shaped piece of the bone removed. This wedge, however, was not sharp at one end, and was sufficient to shorten the leg about an inch. The bones went into position very well, but the soft parts were so voluminous that the skin could not be made to cover the wound, and consequently it burst open. Later, it was necessary to do a plastic operation. Two long incisions were made on either side of the wound, the skin dissected up and drawn together over the wound. Thiersch grafting was performed on February 22d. She now has a fairly good leg. The bone is the same length as that of the sound leg, and there is absolutely no tenderness. As yet, she does not walk very well, because she has been out of bed only a week.

The bone was found to be roughened on the surface, and the central canal had entirely disappeared. It was much more solid than usual, although not as hard as cortical bone. My recollection is that the wedge measured over an inch at the narrowest part, which was posteriorily, and as much as two inches on the anterior sur-

face. Only the fibula was fractured. I think the condition was due to syphilis.

DISCUSSION.

DR. WHITMAN: This case brings up the interesting question as to whether such hypertrophied bones should be shortened so as to make the two extremities of equal length. As I understand it, when bone becomes hypertrophied it becomes hard and does not grow. Therefore, I should not think it necessary in a young subject to shorten such a bone to make it the same length as the other, for the latter will grow as the child gets older and the hypertrophied bone will not.

DR. SAYRE: Last month I showed a patient before the Section on Surgery who had marked enlargement of the tibia, which developed rapidly after a traumatism. From the radiograph which was made in Dr. Curtis' case, it seems to me that there is a mottled appearance of the bone such as I have seen in syphilitic disease.

DR. THOMAS H. MANLEY: The case submitted by Dr. Curtis presents about all the gross features of malignancy—of osteosarcoma. This lesion, as in most forms of true malignancy, is limited to the cortical or compact diaphysis, the infiltration extending into and involving all the soft parts; in fact the evidence points to diffusion at the present time. The result from the osteoplastic procedure is all that can be desired in the way of reducing the length of the limb, but it is apparent that further trouble is certain to ensue. It will be interesting to note the future progress of the case.

OBSCURE DEFORMITY OF THE SPINE.

DR. TOWNSEND: This little girl is eleven years of age. She was brought to the clinic last week for the first time, with the mother's statement that two weeks previously, while giving the child a bath, she noticed a prominence of the spine. The child has absolutely no symptoms, no pain, and no history of illness. She can move her back in any direction without complaint, and stands any amount of jarring. It is a question if she ever had Pott's disease. If so, it is one of the mildest cases I have ever seen. Of course, we all know that Pott's disease can exist without pain and with a considerable amount of flexibility of the spine, but this child can bend remarkably well in any direction.

DISCUSSION.

DR. GIBNEY: This case reminds me of one I saw not long ago in which a child had a deformity very like the one present in Dr. Townsend's case. There was no pain and the disease seemed to me to be a rachitic deformity. I am going to try forcible reduction.

DR. TOWNSEND: It is a question in my mind whether such a sharp curve as is present in my case is a favorable one for Calot's treatment.

POLIOMYELITIS.

DR. TOWNSEND: This little boy is suffering from poliomyelitis. The spinal muscles are affected, and there is more or less bulging of the sides of the body. The child has not sufficient strength to stand erect. He was first seen in October, 1897, and has been treated with tonics and electricity. Pads were applied to the sides, and maintained in place by a belt round the body to prevent the bulging. There is no curvature or bending of the spine.

POTT'S DISEASE; TREATMENT BY FORCIBLE REDUCTION.

DR. V. P. GIBNEY: These are cases in which I have employed forcible reduction after the method of Calot. The first is in a boy twelve years of age. The disease has lasted ever since he can remember, and he has had no previous treatment. The kyphos in the dorsolumbar region was very marked, as is seen in this tracing. He had the girdle symptom of which Dr. Sayre speaks. On March 1st, 1898, he was put under the influence of an anesthetic, and forcible reduction was performed. A plaster-of-Paris corset was then applied in the prone position, beginning at the pelvis, because the deformity was low and reached up to the axilla. The head and neck were not fixed. There was absolutely no reaction. I employed only a moderate amount of force, but it was sufficient to reduce the kyphos to a large degree. The parts yielded easily. He was kept in bed three days, much against his will, and since then he has been playing about the wards.

The second case occurred in a boy six years of age, who was operated upon on March 8th. He had been treated by apparatus, jackets, etc., and the disease, which was also in the dorsolumbar region, was arrested. The tracing of the kyphos is shown in this drawing. The amount of force employed was not greater then in the first case. During the operation his respiration became rather labored, and the administration of the anesthetic was discontinued. The only reaction was a slight slowing of the pulse after the operation and again a few days afterward.

The third case, in a girl aged fourteen years, is one of marked curvature of the spine in which I was led to attempt a similar operation because her parents urged me to do something to correct the deformity and were even willing to have section performed. She took the anesthetic badly, and three attempts were made. I employed a twisting motion for some five or ten minutes and then put her in plaster of Paris. There was no reaction. She is now an inch and three-quarters taller than she was before the operation, and the back is in a much better position than it was previously.

I have presented these three cases merely to show that the operation can be done without bad results. I have a patient who has paraplegia due to pressure and upon whom I expect to operate by this method in the hope of relieving the paraplegia. Cases have been reported in which this has been done. While I believe, as do most of the Continental and English surgeons, that deformities can be materially reduced by this method, I am of the opinion that it is best to go slow and do it gradually at several sittings rather than all at once. I appreciate the objections which have been raised against the method, but the clinical facts must bear some weight in the discussion.

I have here also a rather obscure case. This boy came to the hospital during May last. In January, 1897,

he complained of pain in the left knee, and walked lame. The mother was told that he had "consumption" of the knee, and the limb was amputated at Bellevue Hospital during March of that year. The history is rather confused, but it was said that he had had a fall. There is now an excoriation of the shaft of the left humerus upon which we have operated several times, and also one upon the right elbow. In the discharge from the latter streptococci, staphylococci, and some micro-organisms which resembled diphtheria bacilli were found, but no tubercle bacilli. Recently the house surgeon called my attention to the fact that the patient has some difficulty in opening the mouth, and there seems to be a beginning ankylosis of the jaw.

DISCUSSION.

DR. PHELPS: In connection with Dr. Gibney's cases of Pott's disease treated by forcible reduction, I have one which I would like to present. This little girl is seven years of age. Four and a half years ago she developed a curvature of the spine, and since then has worn a jacket. She had had some cough, but no evening temperature. She had a kyphos, which is shown in this tracing, between the sixth and ninth dorsal vertebræ. She entered the Post-Graduate Hospital, and I operated upon her there. I confess that I approached the case with fear and trembling, and when I began making pressure there was so much snapping and cracking that I desisted, for I thought the child's back was broken. However, the kyphos was somewhat reduced as is shown by this second tracing, made after the operation.

The operation seems very cruel, and, if I had not been fortified by the favorable reports of the French surgeons, I would not have dared attempt it; and yet there was no reaction following the operation. The child was up and about within less than four days. In one other case I succeeded, without anesthesia, in reducing a beginning kyphos by this method.

DR. TOWNSEND: It seems to be that we ought to go slow in advising the profession to employ this treatment. The dangers of the operation are many. For instance, the result would have have been disastrous if forcible reduction has been employed in a case we had at the hospital last week. A child three years old, with Pott's disease, was admitted and was put upon an open frame. She had some difficulty in moving the head. She had had an attack of bronchitis before admission; so when a slight cough developed it was ascribed to the bronchitis. I was called up one night by the house surgeon who said that the child's respiration was bad. I suggested some mild remedies, and the next morning asked Dr. Holt to see her. He advised the use of a croup kettle. At this time there was no pneumonia and no asphyxia. That night the child became asphyxiated and died. Autopsy showed a retro-esophageal abscess in the median line directly over the vertebral column and extending to the right. There was no pressure on the trachea, which was normal in size and not flattened. There were numerous enlarged glands, and these pressed upon the nerves. The second dorsal vertebra was much diseased, so much so that in examining it I pushed my finger clear through the spinous process. If I had attempted forcible reduction in this case I would have ruptured that abscess or caused damage to the bone. I am aware that we all realize the dangers of the operation. The difficulty will be to select the cases in which it may be safely performed.

DR. H. L. TAYLOR: I quite agree with Dr. Townsend that we ought not to let the impression go out that we advocate the method until we have had more experience with it. The operation has been much modified since it was first suggested. In his first article, Calot said that "the spine should be forced into place." In his next article he said that if any difficulty was experienced in forcing the spine straight, he took out a wedge-shaped piece of the bone. Chapeaux (7) considers it essential to wire the spinal processes. All these modifications of the operation have been adopted. The French surgeons also consider it important to encase the head and shoulders in a plaster-of-Paris jacket. It has further been suggested, and very sensibly, that the reduction should not be done at one sitting, but at several. The tendency is to make the operation very much less radical. Many surgeons say that it is wrong to use much force. Calot says he uses all his strength—"*toute ma force*"—while traction is made upon both upper and lower extremities. The operation has been so much modified that it remains to be seen how much of the original procedure will be left after it has been well studied. While it is in the hands of experts, we are safe; but it is not well to let experimentation extend into non-expert hands.

DR. SAYRE: "An ounce of prevention is worth a pound of cure." In Pott's disease the diagnosis should be made before the kyphos forms, and there will then be no necessity for correcting it. I would like to call attention to the fact that as far back as 1830, or thereabouts, this same procedure was employed, except that instead of the hands, they used a large windlass arrangement and a long lever with which to force the spine into position. This apparently met with disfavor, for it passed out of use. It seems to me that in a great many instances forcible reduction would be followed by very serious results. If we could only determine in advance the cases in which the spine could be safely straightened we would be able to proceed intelligently. Inasmuch as we cannot do this, it is difficult to know what to do. In some cases the bone is so diseased that any attempt to forcibly straighten the spine will result in producing gaps between the vertebræ; in other cases a psoas abscess will result.

When my father first applied plaster-of-Paris jackets, he stretched the patient as much as he could and still not cause discomfort. One of the celebrated German surgeons, probably on the ground that if a little of a good thing is good, more is better, stretched his patients by means of weights applied to their heels. Two or three of them promptly died, and the autopsies showed that in each an abscess had been ruptured. How much the relationship between perpendicular position and the anesthetic had to do with the deaths, I do not know. I believe there is now a surgeon who suspends his patients by the heels when he applies a jacket.

Forcible reduction has been employed in quite a num-

ber of cases, and the death-rate, I believe, is so far only one per cent. It is extremely doubtful, however, whether we should employ this method. The cases should be most carefully selected. There should be no elevation of temperature and no active pathologic process. I recall a case almost exactly like the one referred to by Dr. Townsend, in which the child died within two hours. Autopsy showed a large saddle-shaped abscess at the junction of the trachea.

DR. ELLIOTT: In a recent number of the *British Medical Journal* Murray reports two cases in which forcible reduction was followed by death. One patient died of acute tuberculous pneumonia and the other of acute tuberculous meningitis.

DR. PHELPS: As I said before, I confess that I undertook the operation in fear and trembling and against my convictions. After examining pathologic specimens and noting the bone changes which take place in Pott's disease and in analogous affections, it seemed a dangerous thing to do. I have studied the literature of the operation, and find that it is a very old one, although there is no question but that Chipault is the modern originator of the method. Calot followed him in the work. The latter presents deductions which seem to show that the bone is reproduced in cases in which there is wide separation after reduction. Regnault also reports reproduction of bone. Lorenz and others have had relapses and have reported them. Ménard had a case in which he reduced the kyphos and ruptured an abscess. In another case fracture of the vertebræ was produced. Calot reports 204 cases with no accidents and no deaths on the operating-table. Menod criticises him and says his results are too good and should not carry weight. Chipault says there are too many relapses, and contends that all cases will relapse unless the spine is wired. Lorenz reports paralysis and relapse following the operation. Jonnesco has reported three deaths in thirteen operations. Lorenz and Ménard are the chief critics and they denounce the operation. Chipault is conservative and cautious. Ménard is judicial and skeptic, and the majority are enthusiastic, says Lovett.

The patients presented here to-night are not the first to be operated upon by this method in this country. Ridlon of Chicago has performed the operation a number of times with excellent results. I believe there is a legitimate field for this method. The time to employ it is early in the course of the disease. In case of long standing, in which there is a large kyphos, ankylosis, and abscess, it is a dangerous procedure. I think we should go slow, and that this Section ought to discourage the general employment of the method. For the present it should be confined to experts in orthopedic surgery. Within a few years we will know more about it.

DR. GIBNEY: I think we all agree with what has been said. We should discourage the wholesale performance of an operation of this kind. Lovett has recently discussed the subject fully in a paper in the *Boston Medical and Surgical Journal*. Mr. Jones of Liverpool has also reported fifty or sixty cases in which he has performed the operation. I appreciate all the dangers connected with it, and I merely presented these cases this evening to show that it could be performed without reaction, and not for the purpose of advocating its general employment. The case referred to by Dr. Townsend is an exceptional one. Most of the cases we see offer no special contraindication to the operation.

In regard to what Dr. Myers has said about waiting for a cure by other means, if anybody waits longer for a cure than the orthopedic surgeon, I would like to know who he is. We treat our patients and kept them in braces for years, and I do not see why they should wear apparatus for these long periods if forcible reduction can cure them within a shorter time.

There is much difference of opinion in regard to the details of the operation. Mr. Jones and his colleagues in Liverpool criticise the French surgeons for putting their patients up in cotton. They also advocate the steel apparatus rather than the plaster-jacket. All of us know that there are great differences in plaster-jackets. We also know that if too much cotton is used, we do not get a good fit, for the parts recede and the jacket is then much too loose. If the plaster is properly applied and fitted over the hard parts, it will give no trouble. Lovett claims in his article that a certain proportion of patients with hip-joint disease treated by forcible reduction have died of tuberculous meningitis. I, for one, do not put much faith in this statement. I do not know how the reports of other operators read, but I do know that for years I have been forcibly correcting deformities of the hip, and that it is the rarest thing in the world to cause dissemination of the bacilli.

I do not find that patients with a deformity of the spine are willing to go through life with it. They are morose, and feel that Nature has treated them harshly, and it is very necessary to do something for them. I know that if I had a child with such a deformity I would welcome anything which promised relief. I think there is a way of treating these patients by studying them and making a proper selection of treatment and not trying to do too much all at once. I do not believe it is necessary to fix the head and shoulders. If we bring the plaster well up, we will not have any recurrence. Just what Nature will do in these cases remains to be seen.

MALIGNANT DISEASE OF THE SPINE.

DR. H. L. TAYLOR: This man is forty-seven years of age, a waiter by occupation. He tells me that a number of years ago he was kicked in the chest by a horse. The injury resulted in the formation of a tumor which was excised six weeks ago at Mt. Sinai Hospital. The exact nature of the tumor is not known, but the man tells me that it was the size of his head. About eight months ago he began to have very severe pain in the lower part of the back. Cough and expectoration also began at this time. Examination of the back shows it to be round, and on the left side of the median line there is a projection which appears to be an enlargement of a spinous process at about the first lumbar vertebra. There is marked stiffness and limitation of motion. In addition to this there is an area of sweating on the right side which points

to the existence of a carcinomatous tumor. This is a pathognomonic sign of carcinoma, as proved by antopsy in cases in which the diagnosis was not made during life. This symptom is probably due to involvement of some of the sympathetic ganglia of the lumbar region, and is never seen in tuberculous disease of the spine.

APPARATUS FOR FORCIBLE EXTENSION.

DR. ELLIOTT: I have here an instrument which I have devised for forcible extention. It is especially intended for use in reduction of the congenitally dislocated hip. It can also be used for forcible reduction of the spinal column in cases of the angular curvature of caries. It can be adjusted to any table or bed, and the force employed can be regulated at will, and, if desired, measured in pounds. It is light and inexpensive and was made for me by John Reynders & Co.

REVIEWS.

A TEXT-BOOK OF MATERIA MEDICA FOR NURSES. By LAVINIA L. DOCK, Graduate of Bellevue Hospital Training-school. Third edition. New York: G. P. Putnam's Sons, 1897.

THIS little book has long been known in the field it so admirably covers. It is gratifying, therefore, to find that the demand for it is sufficiently strong to call for a new edition. In the present book the metric system has been added, and the newer drugs of the pharmacopeia have been considered. The description of the older drugs, too, has been revised. The work is neither too diffuse nor too limited, but seems to cover exactly the field allotted to it.

THERAPIE DER HAUTKRANKHEITEN. Von DR. L. LEISTIKOW, mit einem Vorwort von DR. P. G. UNNA (TREATMENT OF SKIN DISEASES. By L. LEISTIKOW, with a preface by DR. P. G. UNNA). Hamburg and Leipsic: Leopold Voss, 1897.

OF the great additions which have been made in recent years to the treasures of our materia medica, dermatology has certainly enjoyed her full share. It is, however, not only in the acquisition of new drugs, but especially in their mode of application and in the determination of precise indications for their use, as well as for their mode of application, that the greatest progress has been made. The scientific dermatologist finds some other indication than the convenience of his patient for determining whether a particular drug shall be used in the form of a plaster, a salve, a paste, a lotion, or a varnish. Among those that have contributed to the advancement of dermatology in this respect there are none greater than Dr. P. G. Unna of Hamburg, under whose eye the book before us has been published.

Dr. Leistikow is peculiarly fitted for the task of presenting the methods of treatment employed by Dr. Unna, having been associated with him in his private and public dermatological practice during the past seven years. As a rational dermatotherapy must ever aim at correcting the pathologic conditions which underly a particular lesion, it was but natural that in the arrangement of his work the author should follow the classification observed by Unna in his "Histopathology of Skin Diseases," and Leistikow's book, therefore, forms a perfect complement to Unna's great work.

The first part of the book is devoted to a review of the dermatologic materia medica. Among the subjects discussed are the uses and mode of preparation of baths, pastes, varnishes, gelatins, salves, mulls, soaps, etc. In the second, the major part of the book, the treatment of the various skin diseases is considered. The author is particularly to be congratulated on the perfect and complete manner in which he has covered the ground, while yet maintaining the concise form necessary in a compendium of this kind. Nor has he failed to observe a just proportion in the amount of space devoted to each subject. Thus, to the treatment of eczema, which constitutes so large a proportion of the diseases observed in dermatologic practice, fifty of the four hundred pages of the book are devoted.

On the whole, while there is naturally but little that is entirely new to the student of dermatologic literature, the book forms a perfect storehouse, rich in valuable suggestions in the line of the latest advances in dermatology.

ÉTUDE SUR LES MALFORMATIONS CONGÉNITALE DU GENOIE. Par le DOCTEUR G. POTEL. Lille: Imprimerie L. Dauel; 1897.

THIS monograph is an exhaustive study of the literature of the congenital malformations and distortions of the knee-joint. The author claims to have written practically a new chapter in orthopedic surgery in bringing together the detached cases of what were supposed to be examples of rare deformities and thus proving them to be not at all uncommon.

Nearly 300 cases of deformity or of defective development of the constituents of the joint, many of which are quoted in minute detail, prove the truth of the author's contention and testify to his industry. He has, for example, collected 50 cases of defective development or absence of the tibia, and states that the list of 97 cases of defective fibula recently published by Haudek might be easily doubled.

Seventy-two cases of genu recurvatum are presented. A proper distinction is made between this deformity of the leg, which is the result of an exaggeration of the range of extension, and true dislocation, in which the joint surfaces are actually displaced. Genu recurvatum and absence of patella (100 cases), which is often associated with it, are due to primary contraction or defective development of the quadriceps extensor muscle.

Malformations of the bones, aside from a small proportion caused by amniotic adhesions, are due to defective development of the fetus, the result of infection with some unknown poison.

The author quotes Morgagni, to the effect that the best way to ascertain the truth on any subject is to bring together as many observations as possible for comparison and study. If, therefore, one does not agree with the author's conclusions, he may study the cases in the search

for a better theory of the cause of congenital deformities.

This monograph, which was written as a graduation thesis, is a valuable contribution to medical literature, and might well serve as a model for similar productions.

CLINICAL DIAGNOSIS: The Bacteriological, Chemical, and Microscopical Evidence of Disease. By DR. RUDOLF VON JAKSCH, Professor of Special Pathology and Therapeutics, and Director of the Medical Clinic in the German University of Prague. Third English, from the fourth German, edition by JAMES CAGNEY, M.A., M.D., Physician to the Hospital for Epilepsy and Paralysis, etc. London: Charles Griffin and Company, Limited, 1897.

IT needs but the perusal of Von Jaksch's monumental work, in the original or in English, to refute the statement so often made by surgeons, that surgery has advanced more than internal medicine within the past twenty years. The physician of the present day, if he would prove his diagnosis beyond cavil, must be master of the arts of the laboratory and of the revelations of the microscope. The author of the work under consideration is responsible for this in no small degree. He was not only among the first to teach the newer methods of diagnosis at the bedside, but he was the pioneer author in this field when he published his first edition of this book. Many of the clinical methods of diagnosis, too, here described and now universally employed, sprang from his initiative.

The present edition scarcely needs further notice here than to announce its appearance. There is nothing omitted from the work that belongs to it, and matter was inserted, seemingly, up to the hour of going to press. Even the serum diagnosis of typhoid fever is fully discussed; the announcement of Sanarelli's bacillus of yellow fever appeared too late for insertion here, it would appear. There is no work on the chemic and microscopic diagnosis of diseased states which can supplant this classic book. Others may copy from it, but Von Jaksch's will always be unique among books of its class.

As in former editions, the illustrations are profuse and finely executed. The translator has done excellent work, as comparison with the original reveals, and has given evidence of his wide reading by the numerous additions he has made to the original text.

INTERNATIONAL CLINICS. A Quarterly of Clinical Lectures. Edited by JUDSON DALAND, M.D., Instructor in Clinical Medicine in the University of Pennsylvania, etc., J. MITCHELL BRUCE, M.D., F.R.C.P., Physician to Charing Cross Hospital, London, etc., and DAVID W. FINLAY, M.D., F.R.C.P., Professor of Practice of Medicine in the University of Aberdeen, etc. Vol. III. Seventh series. Philadelphia: J. B. Lippincott Company, 1897.

THE third volume of these clinical lectures for the current year has appeared, and contains, as usual, some notable contributions. Prominent are: "Opium; Its Use and Abuse," by Dr. Herman D. Marcus; "The Treatment of Pulmonary Tuberculosis," by Dr. Norman Bridge; "Hematuria," by Dr. James Tyson; an article of striking merit by Dr. Byron Bramwell on epilepsy; "The Surgical Treatment of Gall-stones," by Dr. James F. W. Ross; "Bleeding in Pregnancy and Labor," by Dr. A. H. F. Barbour, and a timely lecture by Dr. Geo. M. Boyd on "The Desirability and Importance of Locating the Site of Infection in Puerperal Sepsis." With one or two exceptions, the lectures in the present volume are of very superior merit, and demonstrate the wisdom of publishing them in this form.

THERAPEUTIC HINTS.

For Amenorrhea.—

℞ Strych. sulphat. . . . . gr. ii
Ac. oxalici . . . . . gr. x
Mangani lactat. } aa . . . ʒ ii
Ferri peptonat. }
Ext. colocynth. comp. . . . ʒ ss.

M. Div. in pulv. No. XL. Sig. One powder twice daily after meals.

For Neurasthenia.—

℞ Ferri arsenas . . . . gr. iv
Ferri lactat. . . . . ʒ ii
Ext. nucis vomicæ . . . gr. viii
Ext. gentianæ . . . . gr. xlv.

M. Div. in pil. No. C. Sig. Two pills three times daily during meals.

Administration of Alcoholic Stimulants to Infants.—To avoid an irritating local action COMBY advises that alcoholic stimulants should invariably be diluted three to six times with sweetened water, milk, syrups, mucilages, etc.

Trional in the Treatment of Whooping-Cough.—This drug is reported as being very useful in the treatment of pertussis. A dose of from 1 to 8 grains, according to the age of the child, induces a peaceful sleep, only temporarily disturbed by an attack of coughing. It is also advised that the throat be sprayed or frequently swabbed with a one-per-cent. solution of carbolic acid in glycerin and water.

For Gastralgia.—

℞ Orthoform hydrochlorat. . . gr. xv
Aq. dest. . . . . ʒ iii.

M. Sig. One tablespoonful several times during an attack.

For Gastro-Intestinal Catarrh.—In cases in which opiates are not indicated, LIEBREICH recommends the following mixture for the diarrhea:

℞ Tinct. calumbæ } aa . . . ʒ ss.
Tinct. cascarillæ }

M. Sig. Twenty drops four or five times daily.

For Urticaria.—

℞ Menthol . . . . . gr. xl
Chloroform. }
Ætheris } aa . . . ʒ ii.
Spts. camphoræ }

M. Sig. For external use as a spray or lotion. The affected part should then be dusted with powdered starch or oxid of zinc.